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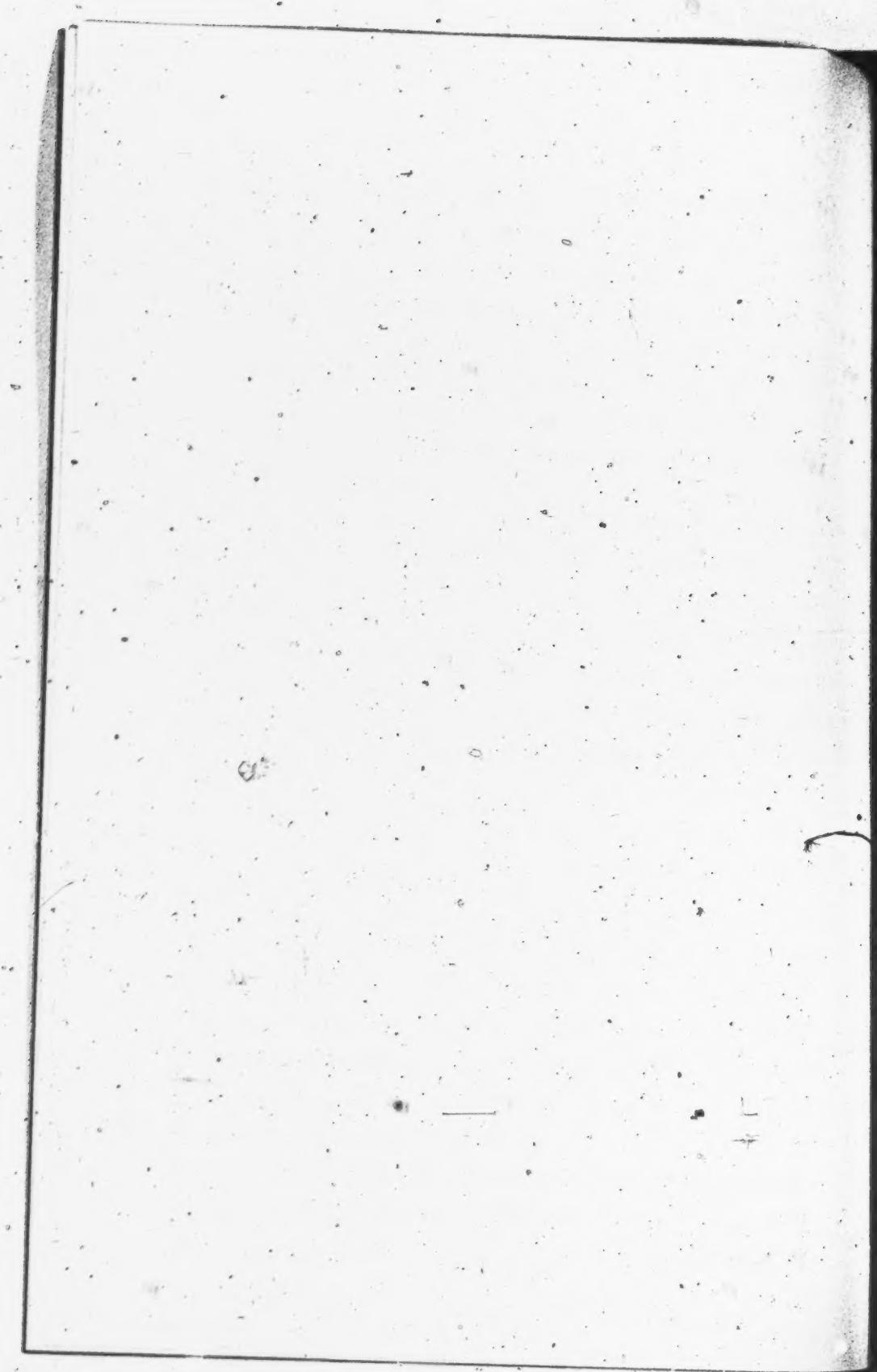
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In the Supreme Court of the United States

OCTOBER TERM, 1938.

No. 3.

THE SCHRIBER-SCHROTH COMPANY,

Petitioner,

vs.

THE CLEVELAND TRUST COMPANY,
CHRYSLER CORPORATION,

Respondents.

No. 4.

THE ABERDEEN MOTOR SUPPLY COMPANY,

Petitioner,

vs.

THE CLEVELAND TRUST COMPANY,
CHRYSLER CORPORATION,

Respondents.

No. 5.

THE F. E. ROWE SALES COMPANY,

Petitioner,

vs.

THE CLEVELAND TRUST COMPANY,
CHRYSLER CORPORATION,

Respondents.

RESPONDENTS' BRIEF.

PETITIONERS' STATEMENT OF THE CASE.

This Statement (Pet. Bf. pp. 2-14), we insist, is inaccurate and misleading in many particulars. In the interest of brevity, we pass by any introductory summary of these errors, and point out the important ones hereafter in connection with its specific subject matter.

FOREWORD TO THIS BRIEF.*

We agree with the statement on page 17 of petitioner's brief that "This Court will not consider any question other than those upon which the petition for certiorari was based." The petition for certiorari (pp. 8-11) shows three, and only three, "reasons relied upon for the allowance of the writ." They are: (1) that an essential element of the patented combination was not described in the application as filed, but was later inserted without sufficient justification and in disregard of *Permutit v. Graver* and *Powers-Kennedy v. Concrete*; (2) that an unidentified fact decision of the Master was overruled, inconsistently with *Adamson v. Gilliland*; and (3) that the decisions of the patent office tribunals should not have been followed (pursuant to *Radio Corporation v. Radio Laboratories*) because the legal basis of those decisions was inconsistent with the later opinion of this Court in *Permutit v. Graver*.

The specification of errors (pp. 15-16) repeats, in other words, the same three complaints, adding only a general allegation of error, too vague to be effective.

We do not understand that, in such a situation, extended recitals in the statement of facts, which might argumentatively suggest additional complaints, can avail to broaden the specific "reasons" in which the petition culminates.

Petitioners' brief wanders far from these three points and discusses many other matters. Among these matters which should be thus excluded from present consideration are:

* Throughout this brief, the emphasis found in any quotation is added by us.

(1) *That the Gulick and Maynard patents are invalid because not involving invention over the prior art.* We cannot suppose that the Court intended to bring up for decision any such broad question of invention. The court below found invention, and elaborately and forcefully stated its reasons for its conclusion. The petition does not challenge this reasoning or this conclusion,— except as challenge may be found in the three "reasons." (But see Sec. II, *infra*.)

(2) *That Gulick and Maynard were anticipated by Long or by Franquist or by Schmiedeknecht or by Spillman & Mooers, etc.* In each of the Gulick-Long interferences found to involve patentable subject matter, priority was awarded to Gulick.* Defendant did not think proper to call Long as a witness in this case. Schmiedeknecht, although he had a slightly earlier filing date than Gulick, was not carried back of Gulick's invention date, and is not prior art. The patented claims in suit each distinguish from Franquist and Mooers & Spillman. Each is foreign to Gulick's basic thought, in structure, mode of operation, and results, and both were before the Patent Office and repeatedly considered by the Examiner (R. pp. 1843, 1857, 1938, 1946) and in many *inter partes* interference proceedings. (R. pp. 1549, 1555, 1577, 1657, 1660, 1665, 1666, 1936 and 1937.) Both experts agreed that each prior art device required modification to obtain the structure, mode of operation, and results of the patents in suit. (R. pp. 567, 528, 529, 952, 986.) All of this is

* R. pp. 1533, 1538, 1544, 1553, 1564, 1569, 1571 (17 Fed. (2) 686); 47 Fed. (2) 365 and 47 Fed. (2) 366, involving Gulick patent claims 1, 2, 11, 12, 13, 15, 28, 29, 30, 31 and 32. Long copied claims 1, 2, 11, 12, 13, 15, 30, 31 and 32 from the Gulick application wherein these claims originated.

immaterial, if we are right in our belief that these issues were not presented in the petition. (But see Sec. II, *infra*.)

(3) *That Gulick had abandoned his invention, or had put it in public use at a fatally early date.* The brief contains many references to this contention; but, clearly, these questions are not now involved. (But see Sec. II, *infra*.)

(4) *That the legal title to Gulick and Maynard patents had been united with others in an estate under an express trust, here referred to as a patent pool.* This subject has only remote and inconsequential bearing on any of the "reasons relied upon," but will be discussed, only generally under Sec. I hereof. Petitioners' brief comes to the "patent pool" again and again as if it affected plaintiff's right to sue or right to recover, and as if the question of unlawful monopoly were somehow involved and the ownership of these patents by an estate was reprehensible. (See Sec. II, *infra*, for our discussion.)

These and other points urged or recounted in petitioners' brief we believe are not within the proper scope of this hearing; but we do not wish to avoid discussion of them, if the Court should think them to be involved. We therefore propose, in Section I of this brief, to discuss the three reasons which were relied upon for the allowance of the writ, and in the following Section II the claims or theories which petitioners now present by their brief.

**SECTION I.—THE QUESTIONS PRESENTED
BY THE PETITION.**

PETITIONERS' "REASON" NUMBER ONE.

Petitioners' first reason relied upon,—disregard of *Permutit v. Graver*,—eventually leads to and depends upon the disclosure of the yielding or flexible character of the structure, as that character may affect the validity of the Gulick and Maynard patents. This character may be named (not very accurately) web flexibility.

WEB FLEXIBILITY—IN THE ABSTRACT.

In approaching this subject,—which constitutes we believe the gist of the controversy which this Court intended to review,—the first essential is that we appreciate the inherent properties of a flat metal sheet, relatively thin as compared to its length and breadth, referred to in both original applications as a "web."* Everyone has always known that as against a force exerted in the plane of its length or breadth, it is strongly resistant and tends to be strong and rigid, while, as against a force at right angles to its plane, it tends to bend. In other words, it is rigid in one direction and flexible in the other. No amount of descriptive words can make these properties more certain and sure; no absence of words expressly stating these properties can make their presence less certain and obvious.

In the Gulick and Maynard constructions, as described and shown, (and speaking of the piston as when the cylinder is vertical, with the combustion chamber at the top) two webs or flat strips of metal, integral with the head,

* Defined in *Webster's New International Dictionary*, Second Edition, as "A thin metal sheet, plate, or strip, * * * as the blade of a sword (Oba.), a saw, etc., the thin sharp part of a colter, * * *"

depend therefrom and carry respectively the pin bosses. These webs have also, carried as far down as the top of the pin bosses, central right-angled flanges obviously intended and operating to strengthen and stiffen this part of the web. The pin bosses, in turn, carry the skirt through laterally extending webs, which functionally seem to be no part of the boss supporting webs, although structurally they are continuous therewith. They have no horizontal stiffening flanges. The depending, boss supporting webs are completely strong and rigid vertically, and as they must be to resist say 1200 explosive blows per minute, and 4800 reversals in direction each minute (running at only 2400 R. P. M.). In the same way, the skirt carrying webs are vertically rigid, and this rigid vertical relationship of head and pin bosses and skirt must always be perfectly preserved, else the device could not stand up a day. The skirt is separated from the head, and one of the thrust bearing faces of the skirt is split longitudinally between the boss connections to permit the skirt to yield to pressure from the cylinder wall.

In operation, as the increasing effects of the heat, affecting cylinder walls or skirt or both, increase the pressure of the skirt upon the walls, the slot in the skirt tends to close, while the skirt still maintains substantially cylindrical shape. It follows inevitably that parts of the skirt supporting webs yield or flex at right angles to the plane of those webs—at least enough to permit the slot to close somewhat and thus compensate for the skirt expansion. This demonstrates horizontal lateral flexibility in the webs at that point,—though probably not enough to be seen with the naked eye. Without this degree of lateral flexibility (slight though it is) in the skirt supporting web, the structure could not operate, as

its operation is obvious from inspection and is described in the (original) specifications of Gulick and Maynard and as the experts on both sides say it will operate.

This is the physical structure as to which petitioner's contention arises. The physical structure and mode of operation of both the Gulick and Maynard pistons are fully described. The complaint is that the webs 17 and 18 of Gulick were not, in the original application, said to be flexible in a lateral direction and that neither the Maynard application or the issued patent specifically said that those webs were flexible. Each application did describe the yielding properties of the skirt and the reason for the longitudinal split in the skirt and its relation to the remaining structural elements of the piston. Judge Simons elaborated on this subject. (See R. pp. 2384-2386.)

WEB FLEXIBILITY AS AN ELEMENT.

From the petition and petitioners' brief the reader would suppose that, by belated amendment, this flexibility was added as an element to the structure of the Gulick piston or must be read into the structure of the Maynard piston. In each the structure, mode of operation, and results were described in the original application.

We say that the whole theory of petitioners (which seems to be their outstanding theory) to the effect that a new element was inserted by amendment or is now to be read into these piston patents, utterly fails in fact. No new element was inserted; no new element is to be read in. The structure, mode of operation and results remain the same as before.

THE COURT OF APPEALS DID NOT SAY THAT A WEB THAT WAS FLEXIBLE WAS AN ESSENTIAL ELEMENT OF THE PATENTED PISTONS.

Hence not only the petition for certiorari in this cause, but the petitioners' case here is based upon a false premise.

What the Court of Appeals said was that "flexible webs" (92 Fed. (2) 337) and "webs laterally flexible" (92 Fed. (2) 334) were elements employed in the pistons illustrated in the patents in suit, which, of course, illustrate no more than the preferred forms of the inventions covered thereby and do not limit the patents to the structural details illustrated (R. p. 1286), as is the well established rule of law (*U. S. v. Societe*, 224 U. S. 309, 328; *Winans v. Denmead*, 15 How. 341; *Machine Company v. Murphy*, 97 U. S. 120).

In further describing the particular embodiments illustrated in the patents in suit the Court of Appeals said (R. p. 2385):

"Gulick separated the smaller ring carrying head of the piston from the somewhat larger skirt by a groove or air gap. This tends to prevent the passage of heat from the head directly to the skirt and permits the bearing faces of the skirt to yield to pressure independently of the head. The wrist pin bosses are pulled inwardly from the skirt periphery, and instead of being supported by the skirt are carried from the piston head by depending flanges, thus providing a vertically rigid support for the bosses with freedom of lateral motion in a direction at right angles to the load thrusts on the piston."

This is merely a description of how Mr. Gulick arranges and operates the embodiments of his invention illustrated in his patent. The Court does not say that the "lateral motion" must be realized by web flexing; there

is nothing in this statement, or any other part of the opinion, limiting the lateral motion to one secured by flexing of the web. Certainly there is nothing in this or any other statement which can be taken as justification for revoking or ignoring the rules in the cases in this Court cited.

It has never been the law that a court's discussion of the properties of the elements in a patent claim make those properties essential. We do not believe that any court in writing an opinion ever intended or expected that its language would either be so construed or so urged.

Therefore, counsel are asking that the patents be invalidated because the Court of Appeals held that the flexible web was a sine qua non when the Court of Appeals did no such thing. Even if that Court had done so, it would have been error in view of the rule stated by this Court in *Winans v. Denmead* and the other cases cited *supra*.

Therefore, petitioners' cause is based on a premise which is false in fact and unsound in law, if true.

FLEXIBILITY, ORIGINAL AND INHERENT, AS ADJUDICATED BY THE TECHNICAL TRIBUNALS.

Rarely (never within the knowledge of respondent's counsel) has the very point in issue been so completely and so often decided, and without dissent. Gulick was involved in fourteen interferences (not all of which appear in the Record). Over and over again his various opponents seized upon the point which petitioners now make, viz., that Gulick's original application did not expressly specify any lateral web flexibility, and therefore he was not entitled later further to describe the web elements of his structural combination as having this inherent property.

If an amendment is made in a specification that is not fairly within the scope of the original application, this is called, in patent office nomenclature, "new matter." And as to that, the applicant is not entitled to his original filing date. The rule is fundamental that it is *not* new matter for the applicant to add, in express words, anything which was fairly and reasonably disclosed in the original specification.

By patent office practice, when an interferant thinks his opponent's specification does not justify the claim in controversy, he makes a motion to dissolve the interference because his opponent is not entitled to "make the claim." The primary examiner, in declaring the interference, has considered and declared that each party was entitled to make the claim. Such a motion to dissolve is referred to the law examiner. If he overrules it, the interference proceeds on this basis to the examiner of interferences, who may refuse to follow the law examiner. The question thereafter persists in successive appeals to the appellate tribunals.

Gulick's opponents, one after another, adopted this practice. It goes without saying that the patent office officials and tribunals, by constant familiarity with these principles and their application, are presumptively far better fitted to decide what is "new matter" and whether an applicant can "make the claim," than is some lawyer, however generally intelligent, who has had no experience along this line but happens to be appointed Master in a patent case.

In one of the Long-Gulick interferences the law examiner considered an interference count which afterwards became Claim 13 of the Gulick patent. The law examiner said (R. 1542):

"If the split permits free expansion and contraction of the skirt portion there is no need for argument to support Gulick's right to make the count. *** An expansion and contraction of the skirt portion is therefore permitted by the longitudinal slit. *** If the skirt expands circumferentially when heated, as the specification states, the flanges or ribs 17 and 18 must allow such expansion, and it is not material for the present purpose whether they move about one end or are slightly flexed laterally. The stated purpose of the longitudinal split being to prevent too great circumferential expansion, obviously some circumferential expansion takes place. *** Gulick discloses all the structural elements set forth in the count, and refers to the circumferential expansion of the skirt, the split 21 preventing too great an expansion. This seems to be all that is necessary, and it is not important how Gulick may have described his device if as a matter of fact it has the requisite structure and function."

This decision was on April 4, 1924, and the same day the same law examiner decided the same question upon a similar motion of Hartog in another interference. The count (R. 1549) afterwards became Claim 29 of the patent suit (not one of the claims now involved). It called in words for "internal yielding ribs, etc." The law examiner said (R. 1549-50):

"It will be apparent that the question for decision is whether or not the ribs 17, 18, 20 are yielding. *** There are several forces at work etc. *** it is not seen how *** some lateral flexure or yielding of the rib [web] 18 between the boss and the skirt can be avoided. The yielding need not be great or due to any special structure of the rib to support the count. Nor is it necessary that the entire rib should yield. If it yields at all for any purpose or for any reason, it would come within the scope of the count. It can not be conceded that the purpose of slot 21 in Gulick's skirt is defeated by alleged rigidity of the lower parts of the ribs."

One of the interferences with Hartog and Long was heard before the examiner of interferences July 2, 1928. He says (R. 1551-2) that there is no sufficient reason to disturb the holding of the law examiner, and he notes that the Court of Appeals of the District of Columbia has then already ruled that the Gulick webs are necessarily flexed under the action of heat. In another interference on the same day he made the same ruling. (R. 1534.)

The Long-Gulick interference was appealed to the Board of Examiners-in-Chief, whose decision was made August 7, 1924. (R. 1544). The Board said:

"The right of Gulick to make the claim is now raised as the sole ground of this appeal. * * * It is admitted that the drawings of Gulick disclose all the structure specified in the count, the only contention being that his structure is such that it will not 'permit free expansion and contraction of the skirt portion.' The skirt is split at 21 and the specification states, page 3, line 21: 'In order that the skirt may not expand an undue amount when the piston is heated, as under operating conditions, it is split longitudinally as at 21.' The object of the split is to permit this expansion * * *. If the webs 17 and 18 were so rigid that they would not yield laterally, the slot would have no function. Under the action of the heat, the circumferential expansion of the skirt would necessarily flex the webs 17 and 18 sufficiently to permit the expansion without substantial increase of the diameter of the skirt."

"We have no doubt that Gulick can make the claim."

One of the interferences reached the Commissioner of Patents (acting by the first assistant). The same point was involved. In a careful opinion (R. 1663-1666) he discussed the questions involved concluding (p. 1665):

"It is believed plain that the latter (Gulick) is entitled to make the count of the issue."

One of these interferences, and involving the same question, came before the Patent Office Board of Appeals,* which said, (R. 1539) :

"It is urged by both Long and Hartog that Gulick is not entitled to make the count. It is contended that there was nothing in the original disclosure of the Gulick application which in any way referred to the means for supporting the skirt of the piston as being resilient. * * * We reach the conclusion that although there is nothing in Gulick's application as originally filed that refers to resiliency, we consider that this feature is necessarily inherent in the structure, as the support for the split skirt must be resilient in order to allow the piston to expand without expanding the skirt. We therefore concur in the decision of the law examiner."

On a petition for rehearing the Board said (R. 1556-7) :

"* * * Hartog urges that we were in error in holding that the party Gulick had a right to make the count because the support for the piston skirt must necessarily be resilient. We have given careful consideration to the memorandum offered in support of the petition but it is unnecessary to discuss this in detail. All the matters referred to therein were before us at the time our decision was rendered and were carefully considered. The point upon which the reconsideration is asked is probably the most important one in the entire series of interferences in which the petitioner is involved. The point has been repeatedly considered in one form or another by tribunals of this office and also in one instance by the Court. We reviewed the entire record and carefully considered the arguments presented. As a result of this investigation our judgment was deliberately made and we find no reasons presented in this petition which influence us to reach any other conclusion."

* Of which the Assistant Commissioner of Patents was a member.

In still another appeal the Board said (R. 1560):

"* * * It is perfectly clear, however, that when the piston skirt was split it was for the purpose of allowing it to yield when the heat caused the piston to expand. If the piston expands and the skirt does not we consider that the support for the skirt must necessarily be resilient and that this is an inherent quality of all pistons of this general nature. We therefore concur in the opinion of the law examiner as referred to in the opinion of the Examiner of Interferences that Gulick has a right to make the count."

This conclusion was not only unanimously reached by all the patent office officials and boards but also by the District of Columbia courts having appellate jurisdiction. In *Long v. Gulick*, 17 F. (2d) 686, (R. 1546) the Court of Appeals recites Long's contention that Gulick had no right to make the claim and the denial of the motion by the law examiner, by the board of examiners-in-chief and by the Commissioner of Patents, and says:

"The drawings of Gulick we think clearly disclose the structure of the count. (Claim 13 of the Gulick patent.) It is contended, however, that his structure is not such as will 'permit free expansion and contraction of the skirt portion.' But the claim expressly covers this objection in the following language: 'Said skirt being split from top to bottom on one side only of the pin bosses to permit free expansion and contraction of the skirt portion.' We think it clear that the object of the split is to permit of this expansion and, as held by the Board of Examiners, 'under the action of the heat the circumferential expansion of the skirt would necessarily flex the webs sufficiently to permit the expansion without substantial increase of the diameter of the skirt.' In this view of the case, the right of Gulick to make the claim is beyond question."

Another interference involving the same question reached the Court of Customs and Patent Appeals, and is reported in 47 F. (2d) 365, 366. The Court said:

"The only issue presented in this case, as now stands, is whether or not Gulick had the right to make the claim. [Count 2 of the interference, Claim 31 of the patent, not in suit.] * * * (Reciting a long succession of patent office rulings) * * * (p. 367): It seems clear to us that, if the slot in the skirt of the Gulick-piston takes care of expansion, it is by reason of the fact that the cylinder engaging portions of the skirt flex or yield, which yielding or flexing must necessarily result, at least in part, from the resiliency of the joining means. We conclude that Gulick had the right to make the claim."

The same court in another appeal (47 F. (2d) 367, 8, R. 1562-3) reexamined the same question, and adhered to its decision.

When, to these decisions of the patent office and District of Columbia tribunals, we add the discussion and conclusion of the court below, we have some eight or ten patent office officials and eleven judges of federal courts all agreeing that Gulick's original application sufficiently disclosed the existence of web flexibility. On the other side there is only the Master; and the controlling point, that the specification-described skirt action necessarily involved this flexibility, was never even observed by the Master, so far as his report shows.*

PERMUTIT v. GRAVIER.

Petitioners attempt to escape from the official and judicial consensus as to the originally sufficient disclosure of

* He said (R. 1152) that Gulick could not rely on the inherent flexibility because it was not novel,—not at all because it had not been sufficiently implied to be a good disclosure.

flexibility, only by saying that these tribunals, in order to reach their conclusion, went beyond the specification and depended essentially upon drawings of something not described,—inconsistently with the later decision in *Permutit v. Graver*. This is a misapprehension; there was no such dependence on drawings, but indeed if there had been, it would have been proper, under the circumstances and for the use made of it in this case and, at the time of such use.

Petitioners' whole case, under this first reason (and indeed upon the second and third) depends upon the supposed rule of *Permutit v. Graver*. There is no such even superficial analogy as requires extended discussion. This for several reasons:

1. In *Permutit v. Graver* the court was considering only the patent, as issued, and held that a vital structural element, the "free" bed, not shown in the drawings or described in the specification (indeed probably in conflict therewith), could not be read into the issued patent to save it from anticipation. There is no such question here. No one doubts that the specification of the Gulick patent, as issued, sufficiently describes web flexibility. Petitioners' complaint is that the specification had been improperly amended. In *Permutit v. Graver* there had been no amendment.

2. In *Permutit v. Graver*, the element which the court below had erroneously read into the patent was a structural element (although in negative form). As the patent had been reconstructed by the court below, it called for the absence from the structure of a locking cover. In the present case neither the presence nor absence of any structural element is involved. The complaint is that (before amendment) the specification did

not describe an inherent functional property of the material of which a completely disclosed structure was made. In *Permitit v. Graver* there was no such question.

3. In *Permitit v. Graver*, the erroneously supplied element had been the one by which alone the invention was distinguished from the prior art, and by which alone anticipation was avoided. The prior art showed the exact combination of the patent claim, unless for this one feature. In the present case the prior art did not show any anticipation, that was complete excepting for this one feature. There was no prior structure having the complete combination of physical parts claimed in Gulick and Maynard except for having webs which were rigid in all directions against all stresses. The Gulick and Maynard patents were for these physical combinations of structural elements, with whatever inherent properties the individual elements of the combination might have.

4. The question now here is not about construction of a patent, as issued and as affected by R. S. 4888; it is only about the sufficiency of a disclosure in an original specification and drawing in order to justify an amendment in the Patent Office, before issue, inserting a few additional words of description concerning the structure already completely shown and described. It has always been the fundamental rule of procedure in the Patent Office that the specification and drawing together constitute the disclosure, and deficiencies in either might be supplied from the other, if the disclosure in the other was clear enough. So far as we know, this rule has never been questioned in the Patent Office or by any court. The Patent Office, in permitting or denying such an amend-

ment, is concerned only with the question "is it, considering both specification and drawings, new matter, or is it consistent with and to be reasonably implied from the original disclosure though completely shown only in the specification and not in the drawing or only in the drawing and not in the specification?" The Patent Office doubtless should look favorably upon an amendment to a specification or drawing which is only of explanatory character.

5. If it were to be assumed that *Permutit v. Graver* was intended to hold (for which assumption there is no basis) that the Patent Office, in approving a specification amendment as not being new matter, could not depend upon the drawing alone, unaided by the specification description, as negativing the "new matter" objection, it would not be important, because there was here no such sole dependence. All the Patent Office tribunals and the reviewing courts placed their dependence upon that part of the specification which distinctly explained the expansion of the skirt and the limitation of that expansion so that the vertical slot would somewhat close. Neither any Patent Office tribunal nor any court referred to the drawing, except in a casual way to say that it was sufficient to show the structure which the specification was describing. No one has ever disputed this; both experts agree that the original disclosure by specification and drawing was sufficient so that anyone skilled in the art could not fail to produce therefrom the piston of the patents, and that if it was made of any material proper for that purpose and as any skilled mechanic would inevitably make it, the webs would have enough horizontal flexibility or yieldability so that the slot would close as intended and the piston would work. Petitioners' whole

theory that the patents were sustained because the drawings, and only the drawings, showed web flexibility, is an illusion,—not to say a delusion.

There is no need to consider *Permutit v. Graver* more fully; but in Section II we further discuss the true basis and extent of the rule.

THE AMENDMENT OF SEPTEMBER 12, 1922.

Neither at this, nor at any other, time was any one of the claims which were sustained by the court below amended by inserting any reference to web flexibility. So far as now material, the only changes made in the specification were (1) to change the word "extremely" to the word "longitudinally," so that the phrase "the above described construction also provides an extremely rigid connection between the piston pin bosses and the skirt" was thus modified, to read "the above described construction also provides a longitudinally rigid construction between the pin bosses and the guide portion of the piston," and (2) to add that "at the same time, when the longitudinal slit is used, as shown, the web structure has sufficient lateral flexibility to permit the split to close more or less under the action of the expansion forces incident to the heating of the piston." The original language, which was also maintained, was "in order that the skirt may not expand an undue amount when the piston is heated, as under operating conditions, it is split longitudinally as at 21."

Thus we see that the original specification sufficiently disclosed all the mechanical elements of the combination structure, and explained that the office of the slit was to prevent undue expansion of the skirt when the piston was heated under operating conditions. Obviously, this refers

to such an expansion of the diameter of the skirt as would conflict with the interior diameter of the cylinder. Equally obviously, this undue expansion of the skirt diameter would not occur because the slot would close, and so, though the skirt walls could expand circumferentially the skirt diameter would not increase. No elaboration can make it more obvious than it now is and then was, on mere inspection, that there must be at some point in the skirt connections some trifling lateral yielding. This amendment stated in express words what was already necessarily implied. So all the imposing array of tribunals and the court below have held. The Master did not undertake to deny that this degree of lateral flexibility was inherent in the original description; he simply ignored that view.

There is no inconsistency between the original statement that the specified construction provided an extremely rigid connection between the pin bosses and the skirt and the amended statement that this extreme strength and rigidity pertains to the longitudinally exerted forces and that there is, nevertheless, such a slight degree of horizontal yielding as permits the slot to operate as intended. Granting this full lateral flexibility (and slight indeed it is) the structure nevertheless does, as originally stated, provide an extremely rigid supporting construction for the skirt. The strength and rigidity which were required were longitudinal. The charge of inconsistency between the earlier and the later statements is in the highest degree technical; there is no substance in it.

THE POWERS-KENNEDY CASE.

Several references are made to this case. It has no bearing on any question here. The only pertinent holding thereof is that if the specification is amended so as to disclose an invention not disclosed by the original specification, this is new matter and the patent is invalid. No one questions that rule. In *Powers v. Kennedy* the opinion demonstrates that the original specification did not disclose that the concrete was to be pushed forward in slugs rather than continuously, but indicated only the continuous operation. The invention supposed to reside in the successive slug action was first disclosed in the amendment; with that premise the result was inevitable.

Incorrect inferences have sometimes been drawn from the casual reference in the opinion to the fact that the patentee had copied the claims of another applicant. The comment that "this of itself destroys the patent" refers, as the context shows, not to the copying of the claims (which is familiar and indeed necessary Patent Office practice*) but to the fact that the patentee had "lifted" the finally claimed invention out of the application of the other man.

Petitioner's brief, apparently in this connection, refers to the fact that Gulick copied from Hartog one of the claims involved in the interferences.** Very true.

* Just as Long copied Gulick claims, and went into interference (decided for Gulick).

** Counsel strain to bring the instant cause within the facts of *Powers-Kennedy v. Concrete*, finding it necessary to resort to the Hartog-Pomeroy interference to draw an analogy with the Leake-McMasters interference of the cited cause. Gulick was not in the Hartog-Pomeroy interference. Neither respondent nor the Aluminum Company conducted the interference on behalf of Pomeroy. The Pomeroy patent (R. pp. 1804 and 185) was bought from the inventor long after conclu-

Learning of the phraseology in which Hartog was expressing the common invention, Gulick added a claim in the same phraseology. There was an interference and the Patent office and the courts decided that, based on his original specification, Gulick was entitled to make this claim. So it was awarded to him and it became Claim 29 of the Gulick patent; but it was not passed upon by the court below and it is not involved under any of the issues presented by the petition.

THERE WERE NO INTERVENING OR ADVERSE RIGHTS.

Petitioners argue that there was an *attempt* to broaden the original Gulick application after intervening rights arose, by limiting the web element of the structural combination to a flexible web element, and that, because of this attempt the patent is invalid. (Brief p. 11, enlarging petition p. 9 as to adverse rights.) It is necessary to argue an "attempt to broaden" because the scope of the original claims (1 to 10, inclusive, of the issued patent,

tion of the Hartog-Pomeroy interference. The Hartog patent (R. p. 1798) was bought after conclusion of the Gulick-Hartog-Long interferences. These facts conclusively distinguish the causes without examining the other facts or the failure of counsel to establish the facts upon which reliance is had. If counsel are correct, this Court held the patent in the cited case invalid because an apparatus patent specification was amended to correct the description of the principle of operation; if counsel are correct the cited case is not applicable here since the amendment of the Gulick application did not change or apply to the principle of operation, but to an amplification of a description of the properties inherent in an element. Moreover, counsel's contention would place this Court's decision in hopeless confusion with the law announced by this Court in *Eames v. Andrews*, 122 U. S. 40, 56, to the effect that an inventor does not have to know or disclose—indeed, he may even misunderstand and misdescribe—the principle upon which his machine operates so long as he describes his apparatus and how to use it, a sound rule of patent law that has been followed ever since by all patent Courts. If the rule were otherwise, all radio and other electric patents, for example, would be invalid because nobody knows what electricity is or the principles upon which it works. They know it by what it does.

claims 2 to 9 being subsequently amended to restrict their scope) comprehended structural combinations embodying the web elements of each device of the contestants in the interference proceedings, including Long. The Court of Appeals, for instance, has held claim 1 of the Gulick patent valid and infringed by the Exhibit 1 structure in this suit. (R. p. 2395.) Since this claim 1 of the patent was in the application as filed (then claim 3 R. p. 1840) and remained in the application with no change whatever, and now appears in the issued patent, there were no intervening rights. This claim 1 of the Gulick patent is verbatim as it was when filed on November 20, 1917, and was allowed in the first Patent Office action. (R. p. 1840 and 1844.) It was copied from the Gulick application by Long and others and was subjected to repeated and bitter attack as to validity in the interference controversies on the same prior art patents that are now asserted by petitioner. (R. pp. 1571, 1936 and 1937.) On these facts petitioners' arguments on intervening rights must fall.

We have now briefly summarized our views as to petitioners' first "reason." Elaboration will be found in Section Two *infra*.

PETITIONERS' "REASON" NUMBER TWO.

A supposed violation of the rule of *Adamson v. Gilliland*, is petitioners' second "reason relied upon." Petitioners have in mind some conflict between fact findings made by the Master and the conclusions reached in Judge Simons' opinion. We are quite unable, from the petition, to identify the conflict to which the petitioners intend to refer.

Petitioners say that the Court of Appeals held that its conclusion, that the aluminum piston problem was not solved until by Gulick and Maynard, was based only upon evidence as to the payment of royalties under the patent pool. The Court of Appeals took no such basis for its conclusion. Its holding was based on the fact that the automobile industry never had adopted to any substantial effect any of the previous inventions, but they had all been commercial failures, while the industry then did adopt to an overwhelming extent forms which embodied the Gulick and Maynard inventions. Instead of holding that this general adoption was because of royalty payments, the court held and made very clear that owing to the elimination of sticking, slapping, etc., without destroying ruggedness and durability, this adoption must have been because the novelty and merit of these inventions were appealing. The mere payment of royalties is among the weakest proofs of industrial approval, as has frequently been held. The Court of Appeals cannot fairly be charged with resting its conclusion on any such slender reed. (See R. pp. 2386-2388.)

Next, the petition seems to say that the Master held that the success of the aluminum piston was ascribable to other things than these inventions, and that the Court of Appeals overruled the Master,—who had seen and heard the witnesses. The fact is, as we view the record, that there was no substantial basis in the evidence for any such conclusion by the Master and we are unable to identify any such finding in his report. So far as we can understand, it all comes to a question of invention over the prior art, which (if not one of law) is at best a mixed question of law and fact. The Master thought there was no invention over Franquist, or over Spillman &

Mocers, or over others of the prior art. Therefore, he thought that the success of the aluminum piston was due largely to these old features rather than to Gulick and Maynard, who had arranged and assembled and modified them into the new and patentable form which the industry adopted and defendant copied. The Master further thought, without any support in the record, that a later trifling modification in the Gulick-Maynard form, which he calls the "Keystone relief," and which had been made by the plaintiff's licensees and which the infringing defendant had copied, played a part in the commercial success. This was such a trifling change, and so clearly did not get away from the Gulick and Maynard patents, that it is difficult to take the claim seriously. The Master had no basis in the evidence for his conclusion,—as one of fact. His conclusion that the Gulick and Maynard patents had not gone into large use, was only another form of his conclusion of law that the patents were invalid, or were confined to their exact form.

Perhaps what can be most plausibly claimed to be conflict between the Master and the Court of Appeals has reference to the adoption and use of the patented pistons by the industry. In aid of the presumption of patentability, plaintiff contended that the industry had accepted and used the Gulick and Maynard pistons, or pistons embodying these inventions, by the million. Such a contention is always, of course, only a make-weight argument, tending to show that the improvements which the patentee had made were of an inventive character rather than embodying only ordinary skill. This contention is in each case of more or less importance according to the circumstances of that case. The court below gave this general acceptance some weight in reaching its conclu-

sion sustaining the patents; but it is never, by itself, of controlling importance.* We doubt whether this Court has ever reversed a Court of Appeals because this Court thought that court, in deciding a question of fact, to have given too much weight to one of the subordinate evidential facts.

Let us see what the supposed conflict was. The Master found that the "structures of none of the pistons in suit have ever gone into commercial use." (R. 1182.) The undisputed evidence was that pistons made by the licensees under Gulick and Maynard (and—in denial of the patents—by the Sterling Company) and in forms held by the Court of Appeals to be within the patents, had come into very general use in the industry and were counted by tens of millions. The finding of the Master, if it is to be reconciled with these undisputed facts, therefore *must mean* that the *precise and exact form* which happened to be shown in the patent office drawings of Gulick and Maynard did not go into general use.** Such superficial conflict as there is between the finding of the Master and the conclusions of the Court of Appeals is therefore nothing but a *question of law* as to whether general acceptance by the industry of a form embodying the principles of the patent and infringing the patent ceases to have evidential force of utility and novelty just because relatively trifling changes or improvements have

* The Court of Appeals said: "These [rules] have proved helpful, even though never absolute (R. 2387) *** It is, of course, axiomatic that commercial success is not of itself conclusive upon the question of novelty or invention." (R. 2388.)

** Even with this construction it is not true as to Maynard, which, in the precise form, was used in large numbers before the licensees made some changes which, from the patent standpoint, were trifling and immaterial, but which petitioners slavishly copied.

been included. Upon this question of law the Master was wrong; the Court of Appeals was right.

Thus it appears that on this record no possible question arises as to whether the Court of Appeals had the power and the right to find that there had been general public acceptance; the Master had made no fact decision to the contrary. However, the conclusion which is sometimes drawn from *Adamson v. Gilliland*, that the finding of a Master, supported by some testimony, is as sacrosanct as the verdict of a jury, is an unfortunate fallacy. We relegate a discussion of it to our Section II.

Clearly, this "reason" does not reach the question whether the Court of Appeals was bound to follow the Master's conclusion about anticipation by Long, or abandonment by Gulick, or anything else not alleged in the petition as a "reason."

PETITIONERS' "REASON" NUMBER THREE.

This was (petition p. 11) only that the Court of Appeals had erred in holding that the presumption of validity, as fortified here by the repeated Patent Office decisions, should prevail unless overthrown by "clear and cogent evidence," and that this was error because these fortifying decisions had been founded on a legal basis inconsistent with *Permutit v. Graver*. This is only another way of stating the first "reason," viz., that these decisions involved an unauthorized dependence upon the unaided drawings rather than upon the specification with appropriate aid from the drawings. This point has already been fully discussed; in truth, these decisions did not, to any extent whatever, rest upon the drawings alone; they rested upon the description of the operation which the specification gave and which was at once completely

informative, calling upon the drawings only to show the general structure and the physical interrelation of the parts.

Clearly, this "reason" does not reach the question whether the evidence of anticipation by Long was sufficiently "clear and cogent,"—or any similar question.

The foregoing considerations are believed to make it clear that the three "reasons relied upon" in the petition find no such basis in this record as justifies petitioners in the greater part of the discussions found in their brief. We have briefly summarized our positions for the purpose stated; and we believe this brief could properly stop here. However, lest the Court might not agree, we proceed in the following Section II to greater detail in the subjects already discussed,—avoiding repetition as much as possible,—and in the form of answer what is said by petitioners on many specific subjects.

SECTION II.—ANSWER TO PETITIONER'S BRIEF.

The Specification of Errors Assigned and Urged by the petitioners relate to the general law; they are not particular or confined to patents or the patent law. A patent is a contract and the requirements of a sufficiency of disclosure of the subject matter covered thereby is primarily a contract question. The weight to be given the Master's views against those of a Circuit Judge, or a bench of Circuit Judges (or three benches of Circuit Judges, as is the case here on disclosure) is, on its face, a general law question. Whether or not the recognized presumption of validity of a grant affirmed by one or by three appeal Courts, as affected by a later decision of this Court, is a general question by no means peculiar to the patent law. These things being so it follows, as a matter of course, that whether or not the Circuit Court of Appeals in the Sixth Circuit was

right or wrong in reversing the District Court is a matter of general, and not of patent, law.

In these premises we have little to say here as to the validity or infringement of the patents in suit. If any such question is to be considered here under any of the errors assigned, we cannot hope to do better in so short a space than refer this Court to the discussions of Judge Simons (R. pp. 2381 to 2395) who wrote the opinion for the Sixth Circuit Court of Appeals (Judges Hicks, Simons and Allen): As stated by the Court in the beginning of the opinion, that Court had recently considered two lengthy records relating to internal combustion engines to which the patents in suit here relate. Judge Simons had considered both records and written both opinions. Therefore, at the time he wrote the opinion in the instant case it would have been difficult to have found a Judge so well informed and skilled in the art to which the patents in suit here relate.

A reading of Judge Simons' opinion in the instant case not only shows that his conclusions are based upon the patent law as early established and long followed by this Court,* but his opinions in the other two cases (*Waukesha v. Willys-Overland*, 77 Fed. (2) 906 and *Perfect Circle v. Hastings*, 88 Fed. (2) 813) show that his holdings on questions of validity and infringement in the art to which the patents in suit relate, were as strict as those followed by this Court in its recent decisions and that in its opinion in the instant cause the Sixth Circuit Court of Appeals was following the requirements of high standards for patentable invention followed by this Court.

* On the presence of invention—*Expanded Metal v. Bradford*, 214 U. S. 366; *Tempco v. Apco*, 275 U. S. 156, 161; *Smith v. Snow*, 294 U. S. 1. On new combination producing new result—*Expanded Metals v. Bradford*, *supra*; *Webster v. Loom Co.*, 105 U. S. 580. Careful consideration by the Patent Office strengthens the presumption of validity—*Radio v. Radio*, *supra*; *Hildreth v. Mastoras*, 257 U. S. 27, 32. Prior uses must be established beyond a reasonable doubt—*Barbed Wire Case*, 143 U. S. 275. The prior art cannot be modified to change its operation—*Topliff v. Topliff*, 145 U. S. 156.

PETITIONERS' POINT I.
WEB FLEXIBILITY AND PERMUTIT v. GRAVER
FURTHER DISCUSSED.

The Sixth Circuit Court of Appeals did not add web flexibility as a new element under the patents; it only found that this flexibility was an inherent property of the structure described and shown. The reference to rigidity of the webs in the original Gulick specification is fully satisfied by applying it to the vertical rigidity which did exist rather than to the horizontal rigidity which did not exist. The amendment to the specification only clarified what was already apparent from the original language, and described a property inherent in the webs and known to everyone skilled in the art, as both the petitioners' and respondent's experts testified.

We have already pointed out the nature of these questions and that they had been passed upon and our contention approved by an impressive array of administrative and judicial opinion. We continue more in detail.

No rule of contract law requires that a contract shall describe the features which are inherent in the thing described. A contract for the sale of a cow would not require that the contract state that the cow had a heart or a hide or an udder. All of these things are inherent in every cow. Likewise, the patent law does not require that a patentee shall describe all of the properties that are inherent in a metal web. There was no more reason for stating that the webs are flexible than there was for saying that they were hard, or heat resistant, or heat expansive or durable, etc: ad infinitum, to the last known property of a metal web, all of which are just as essential to the successful performance of the piston as the flexibility of the web. If all of the things inherent in the cow had to be described and all of the inherent properties of the metal parts of a machine had to be described, contracts regarding cows and

patent specifications regarding machines would be endless; it would be just as futile and as endless since it would be merely announcing what was otherwise inevitably known to those versed in those arts. The net result would be confusion through unnecessary verbosity.

We ought not to have to cite any testimony to prove that a web such as shown at 17 and 18 in the Gulick patent and at F in the Maynard patent would be flexible transversely when made of metal. The merest tyro in mechanics would know that it would be, and inherently so. Nevertheless, since this point was urged through the Patent Office Tribunals, through the Court of Appeals of the District of Columbia, through the Court of Customs and Patent Appeals, and raised again in the Courts below, we made specific inquiry on the subject from the experts of both parties. The expert for the petitioners, as well as the expert for the respondent, answered that such webs as were illustrated in the original drawings and described in the original specifications of the Gulick and Maynard patents would be inherently flexible if the piston were made of any metal of which pistons were made or could successfully be made.

It is true that some specific questions asked of the experts mentioned only the drawings, and did not expressly refer to the specification; but it is plain enough that these references are merely to the structure which was described in the specification and illustrated in the drawings. It is a distortion of their testimony to suppose that they intended to say that the particular size and shape of the web itself, as indicated by the drawing, was the basis for their finding of inherent flexibility. The fact that, as described in the specification, it was intended that the slot should close, necessarily underlies and permeates all the thinking of counsel and experts and all the questions and answers along this line.

Respondent's expert, Dr. Jeffries, said:

"Q. State whether or not it would be possible in your opinion to make a piston out of any metal employed for making internal combustion engine pistons and conforming to the drawings of the Gulick patent, without having flexible webs?

A. No, it would not be." (R. p. 201.)

Mr. Stellman, one of petitioners' experts and long the Chief Engineer for the H. H. Franklin Automobile Company, said:

"Q. That is, with your knowledge of the piston industry you would know by looking at the drawings (of the Gulick patent) that those webs would be flexible if the piston was made of material of which you ordinarily made pistons?

A. Yes." (R. p. 568.)

"Q. Referring to the Long patent 1,489,499, I believe you said the webs 8a would be flexible.

A. To a certain degree I should say they would.

Q. And in saying that you assume the piston would be made of the material ordinarily employed in making pistons?

A. Yes.

Q. And the same thing would be true of these webs 17, 18, and 19 in the Gulick patent, wouldn't it?

A. Yes." (R. p. 568.)

We recognize the rule that an inventor may not add new matter to his specification, which is the rule stated in the authorities relied upon by the petitioners,* and we have

* In common with a practice followed by most piston patentees, Long did not describe his webs as flexible in his patent No. 1,489,499 or in any other of the several Long patents cited in the record and relied upon so heavily by the petitioners as prior art. (R. pp. 1727, 1731 and 1735.)

All the Patent Office tribunals, and the Court of Customs and Patent Appeals (47 Fed. (2) 365 and 367), held that Gulick anticipated Long. (R. pp. 1537, 1539, 1545, 1553, 1561, 1569 and 1571.)

** *Powers-Kennedy v. Concrete*, 282 U. S. 175; *Railway v. Sayles*, 97 U. S. 554, 563; *Permutit v. Graver*, 284 U. S. 52.

no quarrel with that rule, but the rule does not apply to a superfluous amendment of a specification or to the failure to make a superfluous amendment to a specification to describe a property known to be inherent in an element which is illustrated and described. Amending the Gulick specification, which says that the skirt is flexible, to say that the web, which supports the skirt, is flexible, is equivalent to amending a contract regarding a cow to say that the cow has a heart or a hide.

If the authorities cited by the petitioners made any such rule as the petitioners contend, not only would all patents be invalid for insufficiency of disclosure (for none describe all of the properties of all of the elements disclosed therein), but if such rule were extended to contracts, every contract would be invalid, for no contract describes all of the properties of the subject matter covered thereby any more than do the issued patents. If these authorities made the rule, as petitioners say they do, then every decision which has sustained a patent would be wrong because no patent ever sustained described all of the properties inherent in all of the parts. Such a rule would, on its face, be childish because it would burden patents and other contracts with endless and useless verbiage. The rule would be particularly puerile when applied to patents because the properties of elements, such as inherent flexibility of a web, are so well and commonly known to those skilled in the art. Moreover, such a rule would make requirements contrary to the patent statutes which have held that a patent disclosure is sufficient if it is sufficient to instruct those skilled in the art. (U. S. R. S. 4888.) Both the expert of the petitioners and the expert of the respondent in this case were skilled in the art and the patent specifications and drawings involved taught each of those that the webs were inherently flexible.

Such a rule would be particularly disastrous to prior public uses and like prior art other than patents or publications since public uses and like prior art are seldom accompanied by a contemporaneous description at all, and never by descriptions describing such inherent properties as the flexibility of a thin metal web for the very cogent and very simple reason that everyone familiar with such things knows without being told that such is the property of such a web.

In these premises it would be immaterial if this Court had—which it did not—made the incongruous rule that petitioners claim it did in *Permutit v. Graver*, 284 U. S. 52. To say that a disclosure by a drawing alone is insufficient to teach those skilled in the art to which that drawing relates would fly in the teeth of the truth as established by history both ancient and current. The use of drawings as a means of disclosure preceded by many centuries the invention and use of written language. During these many centuries record disclosure was through drawings alone and it was eminently successful; indeed, it is by no means uncertain that the letters used in the first writings were not merely abbreviations of drawings. In every engineering and mechanical art existing today communications are made between those cooperating in the work, such as the engineering and constructing department, through drawings, called blueprints, almost to the exclusion of either written or spoken language. Disclosures by which every constructing man, including those who build skyscrapers, bridges, and other large structures, are received from the designers through these blueprints. We dare say that every one of the hundred million pistons built under the patents in suit were built from blueprints furnished by the designers of the pistons to the builders *de hors* any other description, written or oral. (R. p. 1051.) From the very beginning of the patent practice, the Courts, in considering

prior art devices, have often had before them no other contemporaneous recorded disclosure than that contained in drawings and many patents have been held invalid on disclosures made by drawings alone.

A reference to general contracts emphasizes the impracticability of the proposed rule. Many construction contracts relating to the building of houses and bridges identify the things to be done by drawings attached to the contract. Would the contract be invalid as indefinite because the inherent properties and features of the building or the bridge, or of the materials from which they were formed, were not described in the text of the contract in addition to being illustrated in the drawing and, if so, to make the contract valid would it be necessary to describe the properties of each of the materials of which each of the elements of the building or the bridge were constructed? If a farmer and an agricultural dealer entered into a contract regarding a harvester, illustrated by a drawing attached to the contract, would the contract be invalid if the reel, or the sheath-carrier, or the driver's seat were not described in the text as well as illustrated in the drawing and, if so, would it be necessary, to make the contract valid, to describe the properties of the materials of which these parts were made, although those properties were well known to any farmer or any agricultural dealer who looked at the drawing?

If it were the rule that a drawing adds nothing to the specification, and cannot be at all relied upon where the descriptive language is not complete in all details, then the addition of the drawing would be a useless thing to do. It will not be presumed that the law requires a futile act. Each supplements and perfects the other.

When the instant case is squared with this practice it is found that it would be impossible for anyone making a piston to make it following these drawings (even with no aid from the specification) without making the webs flexible

in the horizontal and rigid in the vertical. (R. 201, 568-9.) As we have said, however, we need not resort to the truth that the drawings were a sufficient disclosure, because the specifications also described the webs, and both experts agree that they would be inherently flexible.

We recognize the rule—and this seems to be the rule in *Permutit v. Graver*—that an element included in a patent disclosure, either through the drawing alone or through the drawing and the specification both, cannot be read out of the disclosure and something else read into the disclosure in its place. As we understand the situation in *Permatit v. Graver*, this Court thought that the patent disclosed a “locked” zeolite bed or a bed in which the zeolite was locked, and that this “locked” bed was read out of the patent and a “free” bed read into it. This refers to structure. We recognize that such a rule is a proper rule when applied to structure and one well grounded in the patent law. No such situation exists in the instant case; in the Maynard patent there was never any change and, therefore, as far as that patent is concerned, there is no ground for even a specious argument that the rule applies to it; in the Gulick patent the original disclosure referred to the rigidity of the webs as “in addition” to the slot in the skirt supported by the webs, in language which the merest tyro in the piston art would recognize as meaning rigidity in the *vertical* plane and not in the horizontal plane. To say that this language meant rigidity in the horizontal plane, as petitioners contend, and must so contend to come even within the shadow of the rule in *Permutit v. Graver*, is inconsistent not only with the language, but also with the disclosure that would be made even by the drawing alone to any one skilled in the piston art.

There is nothing irreconcilable in rigidity and flexibility when in the same web or sheet of metal unless one tries to

read both terms as operating in the same direction. The application of a bit of common sense makes it clear that when read in different directions there is nothing to reconcile; all is plain.

Be that as it may, the fact is that Gulick described his piston as flexible and, in addition to being flexible, as also rigid and that both rigidity and flexibility are inherent in his piston structure. Dr. Jeffries, respondent's expert, said:

"He (Gulick) does have a rigid piston *longitudinally* and a flexible piston laterally." (R. p. 150.)

If, although flexibility is inherent in Gulick's web, we must show that flexibility therein was described in Gulick's original specification, we say:

Gulick described the structure of these connections from the power transmitting bosses to the piston skirt as "flanges 17" which extend laterally from the bosses "in the form of webs 18." He described the structure of the connection of the "webs" to the skirt and to the piston head. He described the mode of operation of his piston as embodying a skirt slightly separated from the head of the piston and split longitudinally at 21 "so that it would not expand *in circumference* with a force great enough to cause the piston to stick in the cylinder." He described the piston as a whole as adapted not to "expand against the cylinder wall to such an extent as to seize or stick." He also said that, *in addition* to providing the piston with a skirt that was separated from the head and was split so that it would not expand from heat an undue amount under operating conditions, the construction of the webs previously described by him also provided an extremely rigid connection between the piston pin bosses and the skirt of the piston. He also described the arrangement of the supporting flanges or webs as providing "a particularly strong support for the bosses."

Therefore, Gulick, in his original application,* described his structure as both rigid and flexible. He said that in addition to this flexibility of the piston skirt, he also provided an extremely rigid connection between the bosses and the skirt. Having described the piston as a whole and the skirt in particular as flexible in the direction of the pressure from the cylinder wall, it seems to us that it was unnecessary for him then to say that each part of the supporting structure that carries the bearing or working faces of the skirt was flexible or what degree of

* As to the functional operation of the piston in an engine cylinder, the Gulick application as originally filed said (R. 1837-9):

"One of the objects of the present invention is to provide a piston which is not adapted to expand against the cylinder wall to such an extent as to seize or stick."

"Another object of the invention is to provide a piston with a skirt slightly separated from the head of the piston and split longitudinally so that it will not expand in circumference with a force great enough to cause the piston to stick in the cylinder."

"Another object of the invention is to rigidly support the piston pin bosses of a piston from the piston walls."

"These flanges extend laterally of their respective bosses in the form of webs 18 which integrally connect with the wall of the skirt * * *."

"Thus, the bosses are connected to both the head and the skirt so that the latter is held in its proper position directly beneath the head as shown in Figs. 1 and 2."

"In order that the skirt may not expand an undue amount when the piston is heated, as under operating conditions, it is split longitudinally as at 21."

"It will be seen that in addition to providing a piston with a split skirt, the above described construction also provides an extremely rigid connection between the piston pin bosses and the skirt of the piston, * * *."

"The arrangement of the supporting flanges 17 between the ends of the piston pin bosses and the connections of those flanges with the piston skirt provide a particularly strong support for the bosses."

flexibility was required of each part during different conditions of operation or to describe the other inherent properties of the structure in any more detail than necessary to instruct those skilled in the art how to make a piston having the structure necessary to obtain this mode of operation and the results of Gulick's invention. The instruction given was definite and certain.* Those skilled in the art, as were the two experts, were unable to produce anything other than a piston that, as Gulick originally said, is rigid in one direction and flexible in another direction, as their previously quoted testimony shows. There is no evidence and no finding that those skilled in the art were unable to make the piston from the disclosure originally given or that a different piston would be made when the workman was told that the webs were flexible. The disclosure was complete. The change made by amendment was in words only, not in substance. Both petitioners and respondents produced pistons made in accordance with the patent. (Ex. 3-T, R. p. 240; Ex. 20, R. p. 155.)

A patent application, as any other written document, must be taken as a whole in construing its parts. The description of the flexibility in one direction can not be construed as meaning flexibility in all directions without running afoul of the description of rigidity. The description of rigidity as "in addition to" the flexible property of the piston, cannot be read to exclude flexibility. To assert that one must be accepted and the other rejected is to fly in the face of the clear and unequivocal meaning of the description when read as a whole, just the same as any other document is read and construed.

Both of these things are true as to the Gulick piston, just as Gulick originally described them and, as the ex-

* R. pp. 150, 151, 193, 577 to 579, and 1071. There is no evidence to the contrary.

perts said, it could not be made otherwise if the drawings were followed. As the Court of Appeals said, speaking through Judge Simons:

"The wrist pin bosses . . . are carried from the piston head by depending flanges, thus providing a vertically rigid support for the bosses with freedom of lateral motion in a direction at right angles to the load thrusts on the piston." (R. p. 2385.)

The Gulick construction provides a connection between the bosses, the head of the piston and the bearing faces of the piston that is rigid in the plane of the connecting webs, "so that the latter (the skirt) is held in its proper position directly beneath the head." The separation of the bearing face of the piston skirt from the head and the split of the bearing face between the connections of the bearing face to the piston bosses, were arranged so that the skirt would not "expand in circumference with a force great enough to cause the piston to stick in the cylinder" during operating conditions. The lateral flexing of the webs, or "the freedom of lateral motion" as the Court of Appeals said, in a direction at right angles to the power thrusts applied to the piston permitted this operation without detracting from the rigid and unyielding character of the web construction in the direction of the terrific power thrusts on the piston.

As the record shows (R. pp. 589, 920, 962, 1077, 1079 and 1080), two vital and essential things in a piston were ruggedness and durability. The axis of the head that carries the sealing rings must not move away from the axis of the cylinder because this would cock the head of the piston in the cylinder and result in failure of the piston. The powerful side thrust from the bosses to the bearing walls of the piston, produced by the angularity of the connecting rod during the power stroke, must not cause the bosses to move in the direction of the cylinder wall because that would tilt the head of the piston at an angle and

the head would stick or seize in the cylinder, breaking up the piston and probably the motor, with all of the other attendant disadvantages incident to what is described as "weaving" of the piston head. (R. 61-63, 109, 1079 and 1080.) It was essential that these connections from the power transmitting bosses to the bearing walls and to the head of the piston be made rigid enough to transmit these explosive car-driving blows, delivered sixty or more times each second, through the piston to the connecting rod and the engine shaft. In other words, the skirt must remain "in its proper position directly beneath the head." Any relative movement between the bosses and the bearing faces of the piston skirt would result in disaster. This requirement for rigidity was limited to the direction of application of the driving forces working on the piston.

Gulick disposed of the heat problem by creating within the piston structure what amounted to a heat and pressure operated engine, through which the effect of the heat on the expansion of the piston was neutralized by the reaction of the cylinder wall pressure through the oil film to the piston skirt and so as to prevent the skirt from expanding against the cylinder wall to such an extent as to stick or seize.

Petitioners rely heavily, if not exclusively, upon the following sentence which was in the original Gulick application:

"It will be seen that in addition to providing a piston with a split skirt the above described construction also provides an extremely rigid connection between the piston pin bosses and the skirt of the piston, which construction may be used either with or without the split skirt and separated head."

It is contended by the petitioners that the rigidity referred to in this sentence meant, or at least included, horizontal rigidity; it is the contention of the respondent that it referred to vertical rigidity only.

The respondent's position is that

(1) Since the functions of a sheet or web of metal are so well known; there could be no ambiguity or no confusion and that anyone, whether skilled or unskilled in the art, who knew anything about the properties of a sheet of metal would know that the rigidity refers to the property in the vertical plane because by the very nature of the sheet it could not be rigid in any other plane.

(2) That since the sentence contains the term "split skirt," horizontal flexibility would not only be inherent in the structure, but would be unavoidable. If there could be any doubt about this, other portions of the specification to which we have already referred make it indubitable.

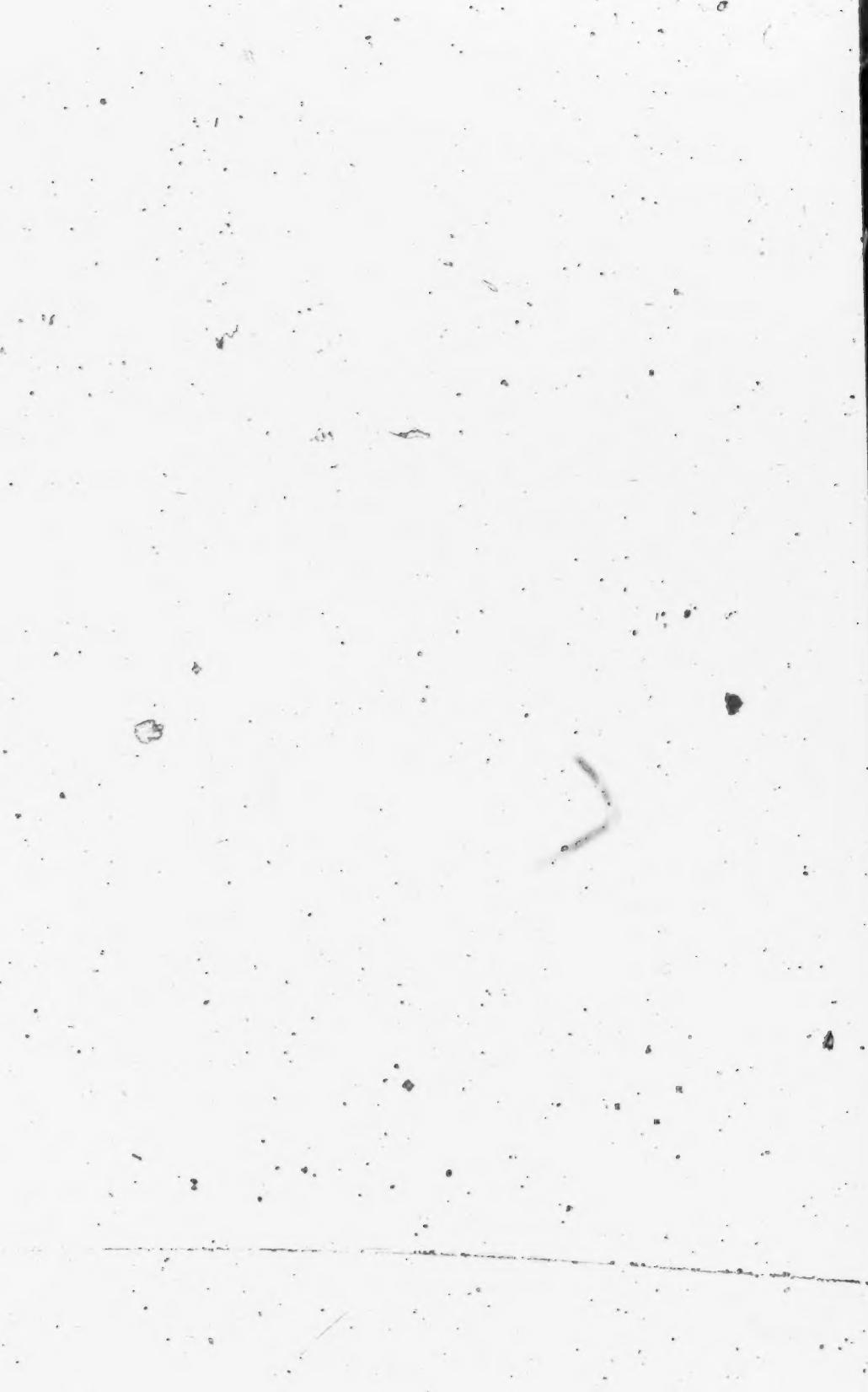
(3) Aside from these things we assume that if it be held that there is an ambiguity in the above quoted sentence, nothing can throw more light upon it than the sentence in the specification next following the one quoted and in which Gulick stated the purpose of the rigidity. This sentence is as follows:

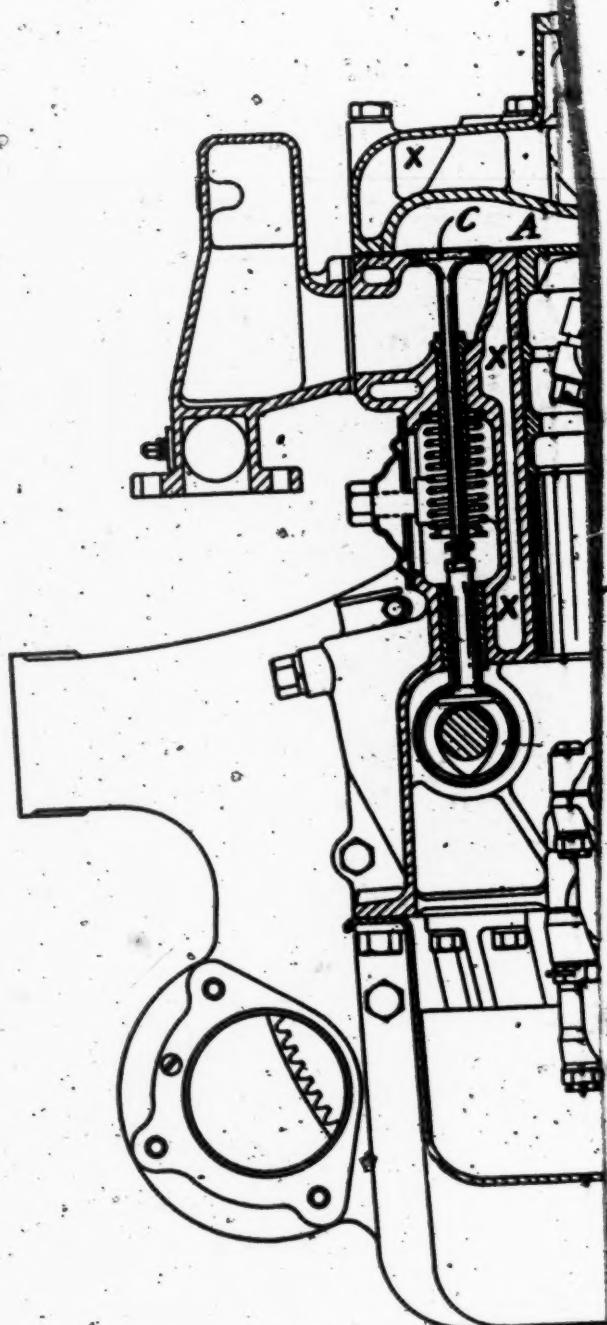
"The arrangement of the supporting flanges 17 between the ends of the piston pin bosses and the connections of those flanges with the piston provides a particularly strong support for the bosses."

The reader of these two sentences must bear in mind that by far the greatest forces between the piston and the piston rod, and hence between the bosses and the webs or flanges 17, are in the vertical. The explosion which impinges against the top of the piston drives it vertically downward. The force of the explosion is transmitted vertically downward through the bosses and the webs or flanges 17 to the connecting rod and thence to the running gear of the vehicle.

This will be clear from the cross section of an internal combustion engine illustrated in Fig. A opposite page 40 of our Main Brief in the Court of Appeals.







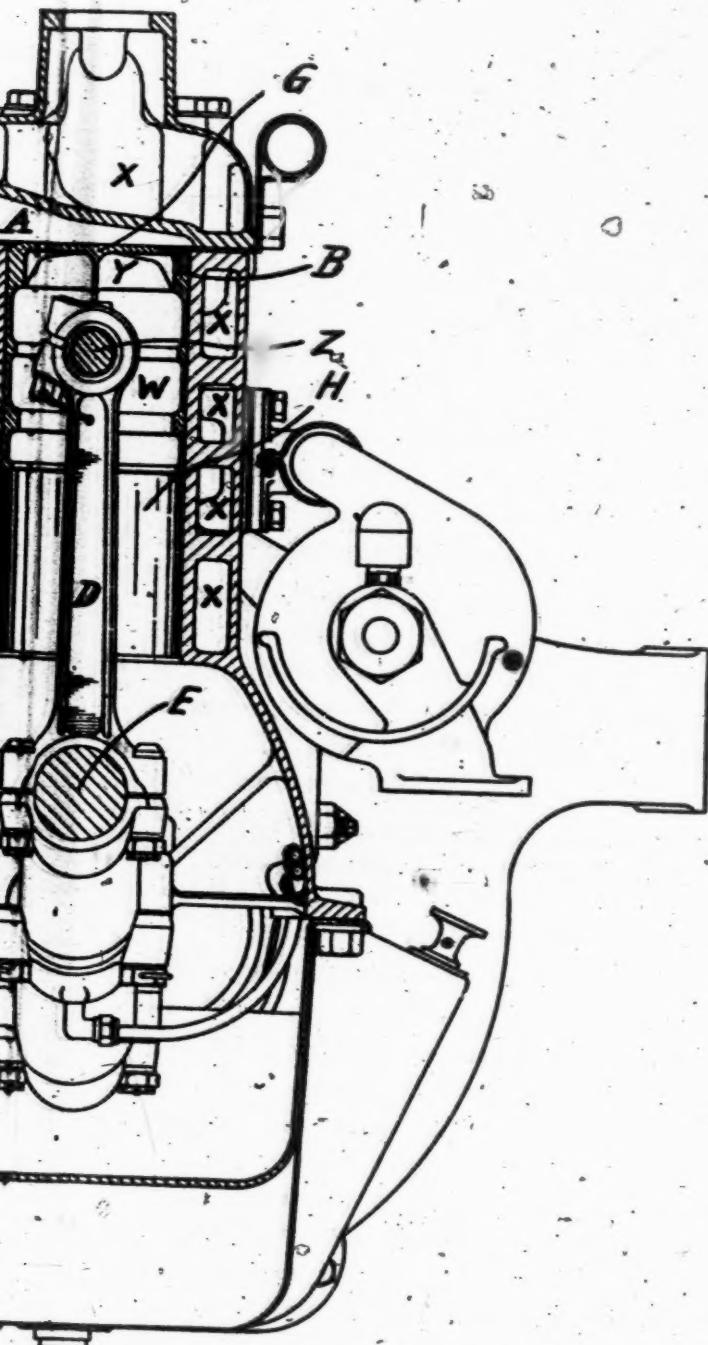


FIG. A

The explosion occurs in the chamber A, impinges on top of the piston head G, drives the same *vertically* downward in the engine cylinder H, as the explosion of the powder in a gun drives the bullet down the barrel of the gun. The piston is connected through a rod D and a crank-shaft E with the running gear of the car. As everybody in the art knows *these connections between piston and car gear must be rigid in the vertical*.

In endeavoring to limit the discussion to the property of expansion and contraction of the piston horizontally, petitioners, throughout their presentation of this cause in all of the Courts, have minimized or lost sight of the need of preserving ruggedness and durability in the piston as a prerequisite to horizontal flexibility. The testimony of Mr. Gulick shows that he had these virtues particularly in mind. As the Court of Appeals said (R. p. 2390):

"While Gulick variously expressed satisfaction with the performance of his experimental pistons, it is clear upon review of his entire evidence that what he had then in mind was that they performed satisfactorily in reference to clearance. They had not demonstrated their strength and durability, or that they were properly designed or machined for commercial use."

When these things are considered it becomes clear that the two sentences which we have quoted are dealing with these essentials which, of course, were predicated primarily upon a rigid connection in the direction of the applied power, i.e. in the vertical between the piston and the connecting rod through the bosses and the webs or flanges. The draftsman of the specification knew that everyone would know that the web or sheet would be flexible in the horizontal. He knew that if the skirt were split there would be no way of preventing the operation of this

flexibility, even if it were desired to prevent it. Those things were known not only to those skilled in the art, but to anyone who knew the properties inherent in a sheet of metal. He also knew that those skilled in the art would be concerned about the preservation of the ruggedness and durability of the piston, at the very bottom of which there lay the question of rigid connection between the piston and the piston rod. The connections between the piston and the piston rod which had been in universal use prior to Gulick's invention, and which were relied upon for rigidity and consequent ruggedness and durability, had been discarded in his piston in order to provide a means which would flex in the horizontal. It was, therefore, important that this feature of vertical rigidity should be described. The horizontal flexibility of the webs was inherent and apparent to anyone skilled in the art. The vertical rigidity of the new piston, however, was not. Hence, we find in the first sentence a reference to this "extremely rigid connection," and in the second sentence a description of its purpose, i.e., the provision of "a particularly strong support for the bosses" which, as everyone who knew anything about pistons could only interpret to mean against the strong vertical forces by which the vehicle was propelled through these connections. All this is borne out and supported by the drawings which show the webs 17 extending almost the entire length of the piston skirt and projected upwardly and downwardly to brace the central part of the webs against forces applied in the vertical.

Many of the opinions of the Patent Office Tribunals were rendered at different times when considering different claims of the Gulick patent. In all, thirteen concurring opinions have been rendered by eight different tribunals. Six claims of the Gulick patent, found valid and infringed, were involved in these long and bitterly contested interferences in the Patent Office and on three appeals from the Patent Office. The long delay in obtaining the Gulick pat-

ent was caused by the persistent efforts of later contenders to wrest from Gulick the rights which the Patent Office and the Administrative Courts believed belonged to Gulick. No appeal was ever taken by Gulick in the Patent Office.

In no instance was any opinion based upon the particular measurements of the Gulick drawings. They were each based upon Gulick's structural arrangement of the elements of his piston and his disclosure that, in addition to the rigid construction for the one purpose, his piston skirt would not "expand against the cylinder wall to such extent as to seize or stick" for the other purpose of maintaining a minimum of clearance between piston skirt and cylinder wall.

Special Proportions of Variants and Special Embodiments of the Patented Pistons: Counsel recognized, and must early have done so, that not only was flexibility inherent in the webs, but that the dimensions of the webs must be varied—not to get flexibility—but to get the degree of flexibility most efficient for each variant. Hence there was considerable cross examination of respondent's expert on the latter question and his answers were in the Court below, and are here, used in such a way that the latter proposition is confused with the first one (see Petitioners' brief, pp. 31-34).

Every important invention is capable of being constructed in numerous designs varying in size, materials and within wide limits in details and dimensions. Into this picture comes the engineer who calculates the strains, the forces, the loads, etc. and proportions the parts of each set of details and dimensions to realize the greatest efficiency in that particular design.

Not only was Dr. Jeffries interrogated on this subject, but special designs, such as the Ricardo piston with the

slippers split, were submitted to him and he did the best he could, without slide rule, engineering tables, etc., to advise counsel on how to proceed to proportion the parts of these designs to apply the Gulick and Maynard principles to them to get the best efficiency.

Attempt is now made to construe this testimony to mean that there is an insufficiency of disclosure because Gulick and Maynard do not do their engineering in their specifications along with their disclosures.

A patentee is not required to do his engineering in his patent; he is not required to do more than disclose a single embodiment of his invention (*U. S. v. Societe*, 224 U. S. 328).

It does happen that Maynard did do his engineering in his patent as well as in his disclosure since, as the record shows, millions of pistons exactly like shown in his patent drawing were successfully used in commerce. (R. pp. 462, 471, 68, 955, 1050 and 1328.)

The Gulick patent does likewise, since, as the record shows (R. p. 639), Gulick was a skilled engineer and the Gulick patent drawings disclose an experimental piston designed by him to get the best results for that design. (R. pp. 719 and 1363.)

What would be the best proportions to be given the parts of other variants, such as the Ricardo piston with the slippers split, can have no bearing on the disclosures of the patents in suit or the issues here. A proposition that a patentee must not only do his engineering in his specification, but must do it for all the variants on the embodiments he discloses would be asking the impossible, and to contend that his patent is invalid because he does not do so is not only unreasonable, but contrary to all authority and all practice.

Yet the Master was confused by this contention; Judge Simons was not.

PETITIONERS' POINT II.

The Circuit Court of Appeals did not treat the Maynard webs as essential elements, but merely as elements of the combination illustrated in the Maynard patent as the preferred form. That Court did not undertake to read "flexible webs in the region of the wrist pin bosses" as essential elements or as, in fact, any elements at all in the Maynard claims which recite webs without any such limitation as petitioners assert. In asserting that Maynard used flexible webs in the piston which he illustrates as his preferred form, the Court of Appeals relied upon the commonly known fact that the webs were flexible in the horizontal and the testimony of the petitioners' expert, as well as that of respondents' expert, to the effect that they would be inherently flexible to common knowledge.

Point II, made and discussed by the petitioners at pages 35-38 of their brief, is different from Point 2 at page 15 which seems to be its Point III discussed beginning at page 38. We will follow the discussions under the order of the Roman numerals.

Under this title (Point II) petitioners try to read into the Maynard patent in issue and into the cause, a feature not recited there and unimportant to any legal issue or to the operations and results of the pistons. So long as the webs are flexible it does not matter that they are not so in "the regions of the wrist pin bosses." Whatever is true of the Maynard piston in this regard is true of the defendant's construction except, perhaps, in degree, as petitioners' expert repeatedly testified (R. pp. 566 and 581), as respondent's expert affirmed (R. pp. 122-125, 127, and 953-955) and as the attached drawings conclusively exhibit. (See page 52 of this brief.)

Moreover, as the evidence we have cited shows, both pistons have flexible webs and both webs are flexible in "the regions of the wrist pin bosses."

The second question discussed by the petitioners under the title "Point II" relates to the rule that a patentee is not required to give directions as to how to design pistons embodying his invention in its various applications. This question was also discussed by petitioners under Point I and our reply will be found at the end of our preceding chapter entitled "Special Proportions of Variants and Special Embodiments of the Patented Pistons."

No Finding of Fact was proposed to or adopted by the Master* that had the slightest bearing on the sufficiency of the disclosure of either the Maynard application as filed or the patent as issued.

Nowhere is there any evidence that the Maynard patent in suit was insufficient to teach those skilled in the art how to make and use the invention of the Maynard patent.

PETITIONERS' POINT III.

The evidence of the petitioners' experts alone was sufficient to justify the Court of Appeals in finding that the aluminum piston problem was solved by the patents in suit and that the commercial success of the aluminum piston was due thereto.*

* All findings and conclusions on the merits were proposed by Petitioners and adopted by the Master without change.

* R. pp. 458-462, 464, 465, 467, 468, 469, 471, 478, 479, 481, 528, 529, 531, 535, 537, 540-548, 551-555, 560-563, 566, 567, 568, 572, 573, 574, 577, 578, 581, 582, 587-589, 1073, 1074, 1077, 1079, 1080, 1081 and 1082.

CONFLICT BETWEEN MASTER AND COURT.

There has been no violation in this cause of the rule in *Adamson v. Gilliland* (242 U. S. 350) either as announced by this Court or asserted by petitioners. The points upon which the Court of Appeals differed with the Master were points (1) upon which there was not a scintilla of evidence to support the Master's finding, (2) law points, and (3) points on record evidence.

The question of sufficiency of disclosure is one based on the records and in such case there is no presumption in favor of a finding of a Master or a District Judge; indeed, the Court of Appeals was much better equipped, because of Judge Simons' experience in such matters, to come to a just conclusion on this subject on the record than either the Master or the District Judge. If the testimony of the two experts to the effect that the webs would inherently be flexible is to be considered then, since they are in agreement, there is not a scintilla of evidence to support the Master and the District Judge on this subject.

The extensive commercial use of the precise piston illustrated in the drawings of the Maynard patent was testified to by Mr. Stellman, petitioners' expert, as well as by Dr. Jeffries, the expert for the respondent.

Mr. Stellman said (R. pp. 462 and 471):

"In general design, the pistons that were furnished by the Aluminum Company, Bohn and Kant Skore, to manufacturers, were like that shown in the drawing of the Maynard patent 1,655,968, in this suit, but I don't know that they were slotted like that. I know that that piston shown in the drawing, and commonly known as a split skirt piston in the industry, was used in quantities since around 1921."

"I can't tell you when I first saw pistons like shown in the Maynard patent, with the slot. I should say they have been on the market, with the slot in them, for a number of years, and in wide use, not only for replace-

ments, but in production by a number of automobile companies."

(See also R. pp. 68, 71, 77, 78, 81, 88, 130, 132, 135 and 955.)

There is not an iota of evidence to the contrary. Counsel have made the mistake of asserting the contrary so often that it may by now be classified as self deception, especially in view of the effort to drag a herring across the trail by reference to Dr. Jeffries' testimony regarding a slight variant with the inference, if not the suggestion, that there is no other evidence on the subject. (Petitioners' brief, p. 41.)

That it is the rule that a patentee may rely for commercial success upon embodiments of his invention other than those illustrated in his drawings, as well as the latter, does not daunt petitioners, who insist that every patent must be limited to what is specifically illustrated and not then unless every property of every part is described in the specification as well. Courts are not so harsh even with criminals; certainly public benefactors are entitled to a more liberal treatment. Presuming that such a harsh rule will be adopted by this Court against all preceding holdings, counsel says that the Gulick piston was never used commercially. That is like saying that none of Alexander Graham Bell's telephones were ever used. About a hundred million Gulick pistons were used in the sense that Dr. Bell's telephones were used.

Whether or not Maynard advanced the art is a legal conclusion and no presumption favors a Master's finding on that subject. Since Maynard illustrates a piston made by the millions and which petitioners found it necessary to duplicate to succeed in the commercial field (R. p. 1074), the legal conclusion of the Court of Appeals is correct.*

* The commercial success of the piston covered by the patents in suit was due neither to "strong hands" nor to what petitioners

There is not a bit of evidence to support the Master's conclusion that Maynard embodies the fundamentals of Franquist. Even the evidence of petitioners' expert is to the contrary. (R. pp. 528, 552 and 1078.)

Whether or not Maynard's combination of elements is a patentable combination is a legal conclusion with no presumption favoring the Master's finding. The finding of the Court of Appeals on the question is bottomed on decisions in this Court. (*Webster v. Loom Company*, 105 U. S. 580; *Expanded Metal v. Bradford*, 214 U. S. 366; *Consolidated v. Diamond*, 220 U. S. 428.)

Whether or not defendant's piston, Exhibit 1, embodies the invention of Gulick and Maynard is also a legal conclusion. We do not discuss it further since it is admitted in petitioners' brief that the question of infringement is not here involved. (Petitioners' Brief, p. 17.)

No evidence supports the claim that defendant employs "the essential structure, function and mode of operation" of a prior art device. Even petitioners' expert repudiates that assertion. (R. p. 567.) Any finding of the Master to that effect is not only not supported by any evidence at all, but such would be a legal conclusion and entitled to no favorable presumption.

We presume that we must say something about the "Keystone relief" mentioned so often in petitioners' brief, though this feature is not only misnamed by petitioners, but both with its proper and its improper name relates to details immaterial to any issue in the cause. It is not in-

(Continued from page 50)

refer to as "the 'selfish' type." It was not due to any causes mentioned by this Court in *Mineral v. Magma*, 280 U. S. 400, or *Textile v. Louis Hirsh*, 302 U. S. 499, but resulted, as the Court of Appeals said, from overcoming the "black eye" given the aluminum piston by prior efforts and failures which were overcome only after tests on the patented pistons were made by engineers of internal combustion engine manufacturers who were, by such tests, convinced of the merits of the patented pistons and of their solution of the problem. (R. p. 2383.)

cluded in any claim in suit; it does not affect any mode of operation or any result of any piston involved here, except perhaps in degree, which is immaterial.

An examination of the drawings of the Maynard patent and Exhibit 1 on the opposite page of this brief will show that the edges of the reliefs shown at Y are slanted downwardly and inwardly to form a frustum of a triangle commonly known as a Keystone. Whether the edges are so inclined or not is immaterial. The evidence shows that these sides may be vertical as in Exhibit 21 (R. p. 1337) or they may be inclined downwardly and outwardly as in the piston of the Jardine patent (R. p. 1294), without any change, except in degree. The record also shows that some users of the Maynard piston, largely for psychological reasons, objected to what appeared to be sharp edges on these Keystone reliefs in the original Maynard design. Hence they were trimmed off as shown in Exhibits 17 and 1. No doubt because of the insignificance of this change structurally, as well as in operation and results, counsel have sought to give it importance by borrowing the term "Keystone relief," employed for the Keystone relief to which we have referred notwithstanding the trimming of the edges resulted only in the removal of a triangular section and left a triangular surface where the sharper edge had been. Since the edge part removed in no way affected the principle or functions of the Maynard piston, the removal of this little triangular section did not do so either. (R. pp. 80-86, 190, 191, 199, 200, 201, 566, 581, 955, 956 and 957.) Yet this is the kind of thing that makes the hue and cry pervading this cause.

We have elsewhere in this brief discussed the "patent pool" question to which the petitioners return in the chapter entitled "Point III" and we will not discuss that subject again except to say that there is no evidence in this record to support the claim that "actually at the end of 1926 there was complete control of the aluminum piston

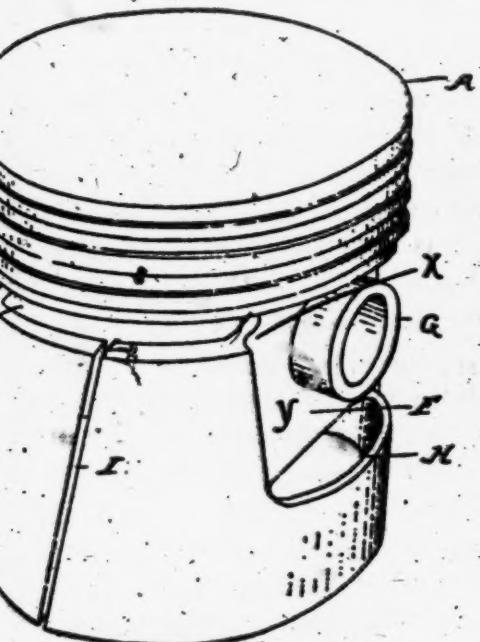


Fig. 1 (Maynard Piston)



Fig. 2 (A Piston of each Plaintiff and Defendants)

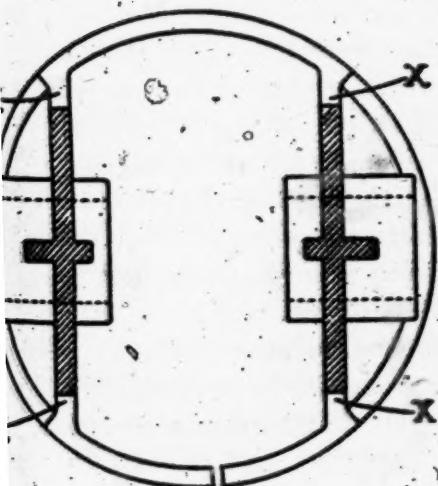


Fig. 3 (Maynard Piston)

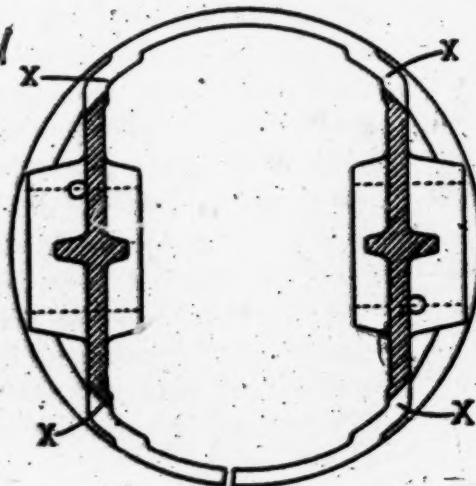


Fig. 4 (A Piston of each Plaintiff and Defendants)

business in Aluminum Company of America," since as the record shows there were several licensees under the patents here in suit and as the Patent Office records would show there are a number of aluminum piston designs covered by patents, not owned by the respondent or the Aluminum Company, available to those who would engage in a business not infringing the patents in suit. Indeed, this record includes many such patent said by petitioners to disclose excellent piston designs. (R. pp. 1667-1681, 1694, 1702.) Inconsistent is the contention that all the patented pistons are uncommercial, yet by them the aluminum piston business is monopolized. The truth lies between: the patents in suit disclose and cover commercial aluminum pistons; other commercial designs are available to the petitioners, but they want to duplicate the designs of the patentees' licensees, and have done so for years.

The Long Pistons were used in very limited quantities in the replacement trade and to some extent in a special air-cooled engine; except for a few more or less experimental pistons all were made from castings licensed under the patents in suit and were, therefore, under the patents in suit. (R. pp. 387, 461, 462, 940 and 986.) As one of petitioners' witnesses said, the use was a "mere drop in the bucket." (R. p. 399.) Long did not solve the piston problem for many reasons. Because of his defects the pistons of the patents in suit prevailed over the Long pistons in both its uses. (R. pp. 216, 359, 399, 455, 463, 986, 1438, 1587.)

Gulick preceded Long as all the Patent Office Tribunals and the Court of Customs and Patent Appeals found in completely contested interferences between the two (17 Fed. (2) 686; 47 Fed. (2) 369).

All engine makers, except the maker of the air-cooled engine to which we have referred, recognized that the Long piston was not a solution of the piston problem and rejected

it; later these same makers adopted Maynard. It was the installation of such pistons as the Long piston in private cars by garage mechanics that gave the aluminum piston the "black eye" referred to by the Court of Appeals (R. p. 2383), and which made it necessary to restrict the licenses under the patents in suit to reliable makers of pistons.

In any event, the conclusions about the limited success of Long's piston and the failure of the industry to recognize it as a solution of the piston problem are conclusions where no presumption favors the Master's finding.

Elsewhere in this brief we have discussed "intervening rights" and the Long piston.

The Court of Appeals did not base its finding of commercial success on the licenses taken or the royalties paid under the patents in suit, but on the evidence of the making, selling and successful use of a hundred million such pistons.

Licenses and royalties are evidence upon public recognition.

There is no truth in the assertion that respondent ever represented that Franquist or Spillman & Mooers were responsible for the success of the aluminum piston; all the evidence is to the contrary.* Petitioners bought these two patents, but never made any such representation regarding them. Even if such representation had ever been made, it could be of force only in case it had been shown that the petitioners had acted upon the same and there was consequently an estoppel forbidding respondent to assert the truth which is, as both experts agree, that the Gulick and Maynard inventions are not found in Franquist or Spillman & Mooers. (R. pp. 528, 529, 554, 563 and 567.) On this sub-

* R. pp. 111, 177, 178, 201 to 205, 246, 247, 496, 528, 537, 555, 929, 943, 944, 1040, 1041, 1052, 1053 and 1078 as to Franquist, and 102, 109, 167, 195 to 198, 373, 458, 553, 555, 562, 563, 567 and 573 as to Spillman & Mooers.

ject there is not a bit of evidence to support a contrary finding; moreover, any conclusion in the premises is a legal conclusion.

Other Outstanding Errors in the Petitioners' Brief: Many of the record references cited by petitioners to support their assertions are to the Master's report; this is because there is evidence to support neither the petitioners' assertions nor the Master's report. For example, there is not a scintilla of evidence to support the assertion or the holding that the Gulick and Maynard pistons never went into commercial use. Even petitioners' expert testified to the contrary, as we have said. (R. pp. 462 and 471; see also pp. 68 and 955.) When the testimony of respondent's witness, at pages 462 and 471 of the record is read, the error of the statement at pages 14 and 41 of Petitioners' brief, that the only evidence on the subject is that of plaintiff's expert, is clear.

Another like error is the statement that—

"Before they expired Respondent represented that the pioneer Spillman & Mooers and Franquist patents were responsible for the success of the aluminum piston." (Citing the Master.) (See Petitioners' Brief, p. 10.)

The extravagance of this statement and the errors in the statement at the top of page 11 to the effect that respondent was "relying upon those patents (Spillman & Mooers and Franquist) as dominating flexible aluminum pistons" are plain from the undisputed evidence showing that neither Spillman & Mooers nor Franquist was commercially flexible. (Petitioners' expert, R. p. 562; Respondent's expert, R. pp. 108, 109, 164, 165, 195-199 and 684.)

We think it fair to assume that patents on unsuccessful devices precede the patent on the successful device or devices, and that some of these preceding patents contain

broad claims. Fifty-seven such patents preceded McCormick's successful reaper and the Wright brothers were preceded by a host of patents on flying machines that never left the ground. And so Spillman & Mooers and Franquist preceded Gulick and Maynard.* To avoid suits, which had been threatened and, under Franquist, actually instituted against one of respondent's licensees, these two patents were bought and incorporated in the group, and being there, were included in the licenses issued and the suits instituted prior to their expiration. But no suit including them was ever tried and no representations were ever made that they were successful or responsible for the success of the aluminum piston. They were so unimportant that when they expired no licensee asked for a reduction in royalties which any licensee might have done had either patent been important. Moreover, the Spillman & Mooers patent expired in 1931 and the Franquist patent expired in 1932. Yet the Sterling Company persists in copying, to their minutest detail, each of the designs of the respondent's licensees in lieu of adopting the now free and open designs of Franquist and Spillman & Mooers. To use the language of Mr. Justice McKenna, speaking for this Court in *Diamond v. Consolidated*, 220 U. S. 428, 441, "It gives the tribute of its praise to the prior art; it gives the Grant tire" (i.e. the patented device) "the tribute of its imitation." Important inventions do not spring full-fledged from the brow of an art; they are always preceded by prior efforts and failures, some of whom succeed in getting patents. Often it is wiser

* The Court of Appeals said (R. p. 2987):

"There was much research and experimentation by those most highly skilled, including the engineers of the Aluminum Company. Colonel Vincent of the Packard Motor Car Company, one of the designers of the Liberty engine, and the engineering staff of the Franklin Automobile Company, under the direction of the defendants' expert Stellman, its chief engineer."

to purchase than to fight such patents, and having been purchased, the licensees feel more secure if their licenses include them for the same reason.

In any event, this record shows neither Spillman & Mooers nor Franquist was a success as an aluminum piston; quite the contrary. (R. pp. 177, 203, 204, 247, 249, 250, 254, 458, 462, 496, 528, 536, 540, 934-944, 1044, 1052, 1074, 1077, 1079, 1080.) Therefore, even if respondent had been mistaken and represented either to be so, no estoppel exists which closes respondent's mouth to speak the truth now and petitioners cite none.

Nor is there any correctness in the statement that the success of the aluminum pistons made under the patents in suit was ascribable to "the advent of the permanent molding of aluminum pistons in 1915." Efforts to use pistons involving the permanent molding inventions in pleasure automobiles failed from 1915 to the advent of the Maynard piston about 1922 (R. pp. 183-184) for the reason that such pistons slapped when cold (R. pp. 125, 400, 460) and stuck when hot. (R. pp. 73, 74, 478, 479.) These failures were affirmed by petitioners' expert. (R. pp. 546-548; see also R. pp. 256, 257, 458, 459, 460, 462, 466, 467, 471, 528, 539, 540, 544, 546, 547, 548, 554, 555, 563, 567, 588, 589, 994, 1077, 1079, 1080, 1761, 1763, 1828, 2235, and 66 Fed. (2) 964.)

We were asked to make suggestions on the Master's report only to questions in keeping with the Master's views. Inasmuch as all suggestions we had to make were contrary to his views (R. p. 1274)—as are the holdings of the Court of Appeals—we made none, and we see no reason why we should have been expected to do what he asked us not to do, for even if it is usual for a tribunal to consider a petition for a rehearing, lawyers do not like to present such a petition when specifically asked not to do so. Thus the usual opportunity to point out errors of a tribunal were denied petitioners by the Master.

Counsel say (Petitioners' Brief, p. 42) "that all Maynard did was to put the T-slot of Long on the piston of Schmiedeknecht." If that statement were correct, and such were the limits of Mr. Maynard's achievements, he would have produced a new combination of elements operating in a different way and achieving new results and such is the evidence supplied by petitioners' expert. (R. p. 563.) *

But Maynard did much more. He located the slots in the right place and he omitted the features of Long such as the U-slot (R. p. 1728), the six-sectioned skirt (R. p. 1736), and the half webs. (R. p. 1732.) Maynard caused the piston to expand and contract to conform to the engine cylinder during the life of the internal combustion engine which neither Schmiedeknecht nor Long ever did. (See Petitioners' expert, R. p. 458.) The evidence is that four or five-thousandths clearance is too much for success; two-thousandths is the limit. (Petitioners' expert, R. p. 460.)

Pursuant to the practice of relying for their contentions on the Master's finding, because the evidence is contrary to both finding and contention, we find the petitioners quote the Master's finding 51 at page 44 of petitioners' brief as follows:

* Such a change in the prior art will not be tolerated (*Topliff v. Topliff*, 145 U. S. 156.)

Such a combination is patentable (*Expanded Metals v. Bradford*, 214 U. S. 366). The Court of Appeals said (92 Fed. (2) 384):

"But to combine insulation of head from skirt, retraction of the bosses from the skirt periphery, connection of such bosses to the skirt with webs laterally flexible and yet so carried from the head as to support the load upon the wrist pin with sufficient strength and rigidity, and to utilize the mechanical force of the cylinder wall upon the skirt and the thermal expansion of the bosses so as to compensate evenly and fully for head expansion and to secure a balanced flexibility of the skirt with no bending concentration at any point therein, discloses, we think, a meritorious concept beyond the reach of those skilled in the art."

"(51) 'That defendants' pistons, Ex. 1, employs the essential structure, function and mode of operation of the prior art, more particularly the Franquist patent, No. 1,153,902.'"

Even defendant's expert testified contrary to this statement as follows (Exhibit 21 is the same except for immaterial details with Exhibit 1 and Exhibit 3-Q was a piston produced by petitioners as a Franquist piston) (R. pp. 552 and 553):

"Q. The ribs in the heads, you mean? A. These ribs here. There is no slot in the skirt—oh, yes, there is a slot shown on one side. In other words, it is a piston somewhat similar to Exhibit 1; is that right?

"Q. Yes, my understanding of it. Now that you have seen the slot in there, do you still say it would be too stiff? A. I would say it would be a pretty stiff piston at that.

"Q. Do you think that would be as stiff as this Exhibit 3-Q? A. Well, Exhibit 3-Q is a different design. It might not be stiff in the same places.

"Q. In what way is it different; in what way is 3-Q different from the one shown in 21? A. Well, these slots, these four slots in the surface, that has one. This has the wrist pin bosses supported by the skirt, and this has them supported by the webs. And the skirt is made with a small relief on this, and made with a large relief on that. The two pistons are not similar in design.

"Q. Well, do you say—I asked you about the stiffness—do you say they have a different kind of stiffness? Why do you say they would have a different kind of stiffness—because of the differences in design that you point out? A. Yes.

"Q. Do you find any other differences in them than those you have mentioned; I mean in design, structure? A. Oh, the only thing common is that the thrust surfaces of the piston are separated from the head."

Although unimportant to any issue here, it was incorrect to say as petitioners do (see petitioners' brief, p. 3)

that the Bohn Corporation agreed to "pool all patents relating to pistons *per se*." The Bohn Corporation never has assigned to respondent any interest in any patent issued to them on their own developments of which there are many.

"The Gulick flexibility is gained," says the witness quoted by petitioners at page 22 of their brief, "by flexible webs and flexible skirt and cooperation between horizontal and vertical slots." (R. p. 203.)

The proofs show that the piston Exhibit AAA comes within the patents in suit. (R. p. 86.)

The diagram at page 10 of petitioners' brief is misleading; if correct, it would present merely the overlapping grants on early and improvement inventions. It shows that Spillman & Mooers patent expired in 1931 and Franquist in 1932, showing that if what petitioners or the Sterling Company really wanted was to make aluminum pistons and not duplicate the respondent's licensees' commercial designs as fast as they came upon the market, which they have done in the past, these people could go back to Franquist or Spillman & Mooers, which they represent as excellent pistons.

ADAMSON v. GILLILAND AS AN ABSTRACT RULE.

The expression by Mr. Justice Holmes in this opinion to the effect that (under certain circumstances) the Master's report should be "treated as unassailable" has led to some confusion in the lower courts. We take it to be generally understood that, for the very purpose of putting an end to such confusion, this Court adopted general equity rule 61½, which rule is repeated and confirmed in the new Federal rules of 1938 by rule 52. Since the adoption of that rule (61½) there is obviously no force in contending that the Master's report or the finding of the trial judge has any effect excepting as that effect is carefully stated and limited in that rule. The Circuit Court of

Appeals for the Sixth Circuit has always adhered to that view of the Master's report which this Court, by the adoption of rule 61½, made obligatory upon all the lower courts.

The history of the "unassailable" doctrine justifies attention. It had its first formulation in *Davis v. Swartz*, 155 U. S. 631-636. The formula, as it was there stated and applied, was perfectly accurate. The court, on pages 636-7, points out that the Master, whose finding was under review, had been appointed not as the ordinary Master, but in effect as an arbitrator. This conclusion was reached by review of *Kimberly v. Arms*, 129 U. S. 512, where it had been determined that the circumstances of his appointment made the Master an arbitrator, and by concluding that the Master's appointment in *Davis v. Swartz* was of the same character. Having reached this conclusion, the court of course said that the Master's finding was as unassailable as is that of the verdict of a jury, or that of a finding of a federal trial judge without a jury. In other words, the rule applicable to reviews at law was applied in this case, because the court did not have the normal powers of an equity appellate court.

The next case is *Adamson v. Gilliland*, 242 U. S. 350. This opinion was by Mr. Justice Holmes. The question was as to the validity of a patent and, upon a sharp issue of fact, as to whether the patentee was the prior inventor. The trial court, upon conflicting testimony, had found that he was. The court quoted from *Davis v. Swartz* this "unassailable" formula. It did so after pointing out that the anticipator must prove his case beyond a reasonable doubt, and that the trial court, acting under this rule of law, had decided the issue against the anticipator. The formula was perfectly and properly applicable, because, if the finding of the trial court against the anticipator is supported by substantial testimony, it obviously cannot be true that

the anticipation has been proved beyond a reasonable doubt.

It is plainly quite another thing, and not supported by *Adamson v. Gilliland*, to apply this same formula to a finding by a trial judge that the anticipation has been established. Such a finding is entitled to great respect, but if, upon the evidence, it is clearly wrong, it cannot be "unassailable." So to consider it would be to deprive the Court of Appeals of the power to consider and apply the rule that such a defense must be proved beyond a reasonable doubt.

These two cases are believed to be the only ones where the Supreme Court has stated and applied this rule,* and neither one of them supports the theory that the appellate equity federal court is under any obligation to accept the fact finding of the trial court when that finding is against the clear weight of the evidence, or is not supported by the burden of proof which the law requires, or is for any other reason a clear mistake.

It would indeed be a sad commentary on federal jurisprudence if, in this case, the so-called fact conclusions of a Master, dependent on all conceivable questions of patent law and overruling a dozen decisions of the Patent Office and District of Columbia courts, and then adopted *in toto* by the District Judge, who heard no oral argument and rendered no explanatory opinion, thereby became a bar to any intelligent and careful consideration by the Sixth Circuit Court of Appeals.

* In *Corona v. Doven*, 279 U. S. 358, 375, the court referred to this rule as "claimed," but neither discussed nor applied it; and in *Alabama Co. v. Ickes*, 302 U. S. 454, 477, it was said that findings by the District Court which had passed unquestioned by the Circuit Court of Appeals, would then be so accepted by this Court.

PETITIONERS' POINT IV.

The Court of Appeals was justified in concluding that the presumption of validity of the Gulick patent in suit was strengthened by the interference contests in the Patent Office under this Court's decision in *Radio v. Radio and Hildreth v. Mastoras*, and that both presumption and support were further supported by many prior efforts and failures, some of which were testified to by petitioners' expert and by general adoption after tests by automobile engineers, etc. There is no error in overruling the Master and the District Judge on these questions because there was not a scintilla of evidence to support the conclusions of the Master and the District Judge where the Court of Appeals overruled the Master and the District Judge on fact questions.

As the Court of Appeals said, any presumption that normally arises to favor the finding of a District Judge "may prove to be an unsafe guide to just decision where exceptions to a Master's report are unilluminated by oral arguments and a decree entered without elucidation of the reasons upon which it is based" (R. p. 2389.) This refers to the scant attention the District Judge was able to give the cause due to the press of other matters, which was also the cause of the reference and respondent's application therefor, the alternative of which was no trial at all in view of such press of work.

This lack of illumination and attention is at once manifest when we note that the Court of Appeals relied upon this Court's opinion in *Radio v. Radio*, 293 U. S. 1, and the District Judge was unable to note that there were in the instant cause the same lengthy and contested interference proceedings and appeals that were present in the cited case and which this Court ruled, in the cited case, greatly

strengthened the presumption of validity.* The careful scrutiny of the Court of Appeals is a safer guide to a just decision than haste and oversight due to overwork that misses matters so important to a just decision.

We will not here repeat the evidence found by the Court of Appeals to sustain the presumption of validity strengthened as it is under the rule of this Court in *Radio v. Radio*; the Court of Appeals ably discusses and applies it. (R. pp. 2387 and 2388.) The facts upon which it is based are undisputed; the salient facts are affirmed by petitioners' expert. (R. pp. 216, 256, 257, 359, 363, 364, 398, 399, 401, 429, 444, 455, 458, 461, 462, 464, 469, 528, 546, 547, 548, 553, 554, 567, 642, 937, 938, 986, 1010, 1011, 1089, 1438, 1587, 1728, 1732, 1753, 1761, 1828 and 2235.)

Alleged Broadening of the Gulick Application After Intervening Rights Arise:

This contention does not, of course, apply to Maynard.

It cannot apply to Gulick either because his patent claim 1, one of the broadest of Gulick's claims, was included in the application as filed and has remained in the application without change ever since. (R. pp. 1840, 1565, 1570.) The Court of Appeals found that this claim was infringed by Petitioners' Exhibit 1 piston. (R. p. 2395.)

The "intervening rights" were not such as accrue to any of the petitioners here and are not claimed to accrue. There is, therefore, no estoppel in favor of any of these petitioners to assert that a claim broader than claim 1 was

* See R. p. 2385:

"There followed long discussions with the examiners, administrative reviews, bitterly contested interferences, and appeals to the Court of Appeals of the District of Columbia (*Long v. Gulick*, 57 App. D.-C. 98, 17 F. (2d) 686), and to the Court of Customs and Patent Appeals (*Hartog v. Long*, 47 F. (2d) 369)."

inserted after said intervening rights if such a broader claim than claim 1 had been inserted.

All the alleged intervening activities, called "intervening rights" by petitioners, were the work of the respondent's licensees, including even the pistons of Long which were made of castings licensed under the patents in suit. (R. p. 940.) There is no evidence in this record that Long made, sold, or used, within the period complained of, any commercial pistons other than those which were licensed under the patent rights in suit here.

We know of no rule which permits an infringer to take advantage of a patentee because of alleged "intervening rights" which consisted of the activities of that patentee or his licensees. Counsel cite, and can cite, none. The same applies to a claim that a patentee may not broaden the subject matter claimed because he or his licensee may have been commercially active in the meantime.

We recognize the rule that a reissuer of a patent may not broaden his claims against one who has acquired "adverse intervening rights" himself, but that rule is not applicable here because (1) the principle upon which it is based is not here present, (2) there was no broadening of subject matter claimed and (3) the alleged intervening rights were not by any petitioner but were licensed under the patents in suit.

The fallacy of petitioners' position is reflected in the last sentence of its section Point IV (see petitioners' brief, p. 52):

"The question was 'not whether invalidity was shown 'by clear and cogent evidence,' but whether, as a matter of law, a patent is valid which does not disclose, describe or discuss in its specification *an element* found to be essential."

This would be forcible if "an element" had been omitted from the original disclosure, but the element, i.e.

the web, is not omitted; it was originally included in each the drawing, the specification and in claims of each of the patents in suit. It is a description of an inherent property of the material of the web, i.e. flexibility, that was omitted. This statement shows, as we have contended throughout this brief, that petitioners' claim that the disclosure omitted an element—which is fatal to a patent claim under the law*—is in effect a claim that there is omitted only the mention of a property inherent in the material of the element and known to be so by every novice in the industry and which the law does not require be included. Thus does the final sentence of petitioners' brief point the error of petitioners' contention.

The Plates in the Back of Petitioners' Brief: The cuts illustrated opposite page 61 are an invitation to make comparisons by the eye without the understanding. Nothing could be more misleading where similarities and dissimilarities are bottomed, as here, primarily, upon an understanding of operations and results. The cut illustrating the Franquist piston does not show the rigid gutters under the slots which alone destroyed any possibility of this piston being a solution of the problem. (R. pp. 177, 246, 249, 496, 537, 540, 558, 943, 944, 1078.)

The legend "Long 1917-1926" above the cut in the center of the page is incorrect and misleading. The production by Long of such a piston as there shown prior to the filing date of either Gulick or Maynard is not established in this record. The evidence shows that Long made many efforts to solve the piston problem (R. p. 429), but was, as late as 1919, still short of the piston shown. (R. p. 1736.).

* The fatal effect would apply only to the claims which included the omitted element since the disclosure without a recitation of the element would support claims not reciting it (*Boyce v. Stewart-Warner*, 220 Fed. 118, 123, C. C. A. 2).

The first drawing of the Long piston here illustrated is dated February 20, 1923. (R. p. 1592.) The oral evidence as to the date of the first use of this Long piston is clearly insufficient under the rule in the *Barbed Wire Case*, especially where, as in the instant case, the witnesses were so carefully "horseshedded" in advance by opposing counsel.*

The cuts showing the Schmiedeknecht piston do not show (as is true) that it is rigid in all of its parts, or (as is true) that the structure would fall apart if slit and split in the manner proposed by Gulick. Petitioners in the Court below contended that Schmiedeknecht did not embody what is shown in Exhibit 1 (and *ipso facto*, by what is shown in the Maynard piston, since, as can be seen from the cuts, one is a duplicate of the other).

As we have said, in this brief we cannot go into the testimony pointing out the differences between these prior art pistons and the patented and defendant's pistons, on the one hand, and the similarity between the patented pistons and the defendant's piston, on the other hand. Neither question is presented in the Points of the Petition for Certiorari or of the petitioners' brief. Within the limits of this brief we can only point out the danger of being deceived by what the eye sees alone, and the necessity of feeding the understanding as well as the eye before a just decision on these similarities and dissimilarities can be

* For example, see R. p. 358:

"Mr. Brumunga told me a couple of days ago that I would be called as a witness, and I had a discussion with him at that time, but not about what I was going to testify to. He asked me a lot of questions and I believe he wrote down the answers. I believe it was this morning that he mentioned that I might be interviewed by Mr. McCoy or by you, (Richey), or by somebody representing the other side. He told me to tell you that I would be glad to answer any question for you, on the witness-stand, if one of you interviewed me."

See also R. pp. 408 and 320.

made. Such a course was followed by the Court of Appeals as Judge Simons' opinion clearly shows.

The cut at page 5 of petitioners' brief does not clearly show the vertical slot. A complete view of this piston is shown at page 1284 of the record.

The Patent Pool and the License to Aluminum Company of America: Although quite immaterial to any issue in this cause, and entirely aside from these "reasons relied upon," the petitioners discuss at length—both apart from and in connection with other subjects—"the patent pool" and, wherever counsel thinks there is an opportunity to do so, they drag in the name of the Aluminum Company of America, one of the non-exclusive licensees under the patents in suit. This discussion can have no other purpose than to seek to unbalance the scales of justice by appeals to ancillary questions.

First: Both questions were presented to the Master who ruled against the petitioners on each; petitioners took no exception. (See Finding of Fact No. 9 and Conclusions of Law, Nos. 1, 2, 3, 4, and 9 of the Master, R. pp. 1097, 1105 and 1106.) Under well established authority, there the matter does and should end.

Zellerbach v. Helvering, 293 U. S. 172, 182, 79 L. Ed. 264, 270.

Second: Neither the establishing of a patent pool—if, in fact, any such exists here—nor the granting of a license to Aluminum Company of America under the patents in suit constitutes a defense in a patent infringement suit. (*Walker on Patents*, Sixth Edition, pp. 16 and 17; *Oil Cracking Case*, 283 U. S. 163; *Kardo v. Adams*, 231 Fed. 950; *Trico v. E. A. Laboratories*, 49 Fed. (2) 404, 405; *Andrea, Inc. v. Radio*, 14 Fed. Sup. 226.)

Third: Since infringers of patents are permitted to pool their interests* and combine against the patentee and the inventor, and since others, such as workmen, farmers, etc. are permitted to pool their interests, there seems no reason why the same privilege should be denied those who in the language of the wise are the greater benefactors of all.** (Of course, lacking any price control or extra-patent

* For example, the cases defended by The National Automobile Chamber of Commerce (*Reo v. Gear Grinding*, 42 Fed. (2) 965 and the *Spot Weld Case*, 265 U. S. 445; *Swan v. Reeke-Nash*, 88 Fed. (2) 885).

** Francis Bacon gave the weight of his opinion to view somewhat similar to the above. He says:

"The introduction of great inventions appears one of the most distinguished of human actions, and the ancients so considered it; for they assigned divine honors to the authors of inventions, but only heroic honors to those who displayed civil merit; such as the founders of cities and empires, legislators, the deliverers of their country from last misfortunes, the quellers of tyrants, and the like. And if any one rightly compare them, he will find the judgment of antiquity to be correct; for the benefits derived from inventions may extend to mankind in general, but civil benefits to particular lands alone; the latter, moreover, last but for a time, the former forever. Civil reformation seldom is carried on without violence and confusion, while inventions are a blessing and a benefit without injuring or afflicting any.

"Now among all the benefits that could be conferred upon mankind, I discovered none so great as the discovery of new arts for the bettering of human life. For I saw that among the rude people of early times, inventors and discoverers were reckoned as gods. It was seen that the works of founders of States, law-givers, tyrant-destroyers, and heroes cover but narrow spaces, and endure but for a time while the work of the inventor, though of less pomp, is felt everywhere, and lasts forever."

On this subject Lincoln, on February 22, 1860, said:

"Next came the patent laws. These began in England in 1624, and in this country with the adoption of our Constitution. Before then any man (might) instantly use what another

(Continued on page 70)

monopoly.) As inventions have become more abstruse, the difficulties and the expenses of presenting patent causes, ripe for adjudication, have increased until, in many instances, such as the present, they have exceeded the purses and the abilities of individual inventors. Hence, as with the other classes we have named, inventors and, as must inevitably happen, other types of patentees, have united in protecting their patents. What petitioners call the "piston patent pool" was initiated and advanced by an individual inventor named Mooers (patentee of one of the patents in this suit) seven years before the Aluminum Company took a license thereunder. Other inventors are involved as individuals, and since patents had been granted to Aluminum Company of America, and to others, which patents were important, if not essential, to protect the interest of Mr. Mooers and these individual inventors, these patentees were admitted to the group also. If the Aluminum Company is the co-beneficiary with the individual inventor Mooers, it is because the government has granted piston patents to the Aluminum Company. The bread that Mr. Mooers has earned by the sweat of his brow should not be destroyed because the government has made him a bedfellow with one of whom the petitioners disapproved.* The eighty patents included in the group are a small part of the existing piston patents, are few compared with the number of patents owned by many big corporations, and include many

* It would seem that judgment, even of the petitioners, about the Aluminum Company might abide the trial of the cause of the United States against that company, now pending before Judge Caffey in the Southern District of New York.

(Continued from page 69)

man had invented, so that the inventor had no special advantage from his invention. The patent system changed this, secured to the inventor for a limited time exclusive use of his invention, and thereby added the fuel of interest to the fire of genius in the discovery and production of new and useful things."

patents which are unimportant, but through the purchase of which many individual inventors have recovered their investments.

Thus not only has invention been encouraged through the grouping of these patents by providing individual inventors with a possible means of realizing on their inventions through cooperative action, but also by the purchase of patents from individual inventors at prices which have assured them a profit on their investments which could not have been realized by them otherwise. The scheme is but another one of those changes evolved in a system to meet changed conditions. The scheme benefits the inventor, it benefits the public, it is the infringer alone who is inconvenienced, and it is the infringer alone who has complained. We note that it is a matter of common knowledge in this industry, as well as with the well informed general public, that the Department of Justice of the United States made a thorough and careful investigation of the plaintiff's "piston patent pool"; and took no action.

Petitioner's general attacks warrant, if they do not demand, a general answer. History has so well established the advantages to the public of the American patent system that those advantages cannot now be denied, as Lincoln said (see quotation *supra*). Few inventions were made prior to its institution and those few were widely scattered over time. The administrations of all patent systems prior to the year 1800 were ineffective; as administered they were a fraud on, rather than an aid to, inventors. The people of the United States were so indignant over the successful manner in which the cotton planters deprived Eli Whitney of his invention of the cotton gin and his rights to rewards therefor that there arose in the United States in the early part of the last century, a popular clamor for the better administration of the patent laws. It resulted that the Courts in this country soon thereafter developed and adopted a

system of providing real protection to inventors. There followed such a host of important inventions as to initiate a period of progress and prosperity such as the world had never before known in any country or at any time. This has continued until people have forgotten the hardships of the preceding eras. It is the loss of the inventor that people so soon forget the hardships he has eliminated.

There is just off the press a book entitled "March of the Iron Men" by Roger Burlingame, which summarizes these facts and proves the statements made by Bacon, Lincoln, and others, which we have quoted *supra*. We know now that inventions made during certain political eras of this country, as Mr. Burlingame points out in particular and Sir Francis Bacon pointed out in general, were more important than any political or social event that happened during those periods. The invention of reaping machinery during the time of Andrew Jackson, for example, was more important than any other event that happened during that period. The invention of Howe's sewing machine in 1846 was more important than any political happening during Polk's administration. Other comparisons are made by or are apparent from the data given by Mr. Burlingame. (See pp. 468-476 of his book.)

It is equally true that there were in political life both the liberals and progressives prior to this era, just as there are liberals and progressives in the non-machine countries today. Progress and liberalism, however, have depended upon the production by machines of the wealth to be distributed, and upon the production of those machines by inventors. No one had more liberal and more progressive intentions and designs than Lenin and his associates. Their efforts both at liberalism and progressiveness failed because there was no machine-produced wealth to distribute and no inventors to invent machines. They sought to save themselves from these failures by introducing the machines

invented in other countries, but their efforts came too late to save either their intended liberalism or progress.

If, therefore, it be necessary to a continuation of the encouragement of inventors that in a changing world, they be permitted to pool their patents, that course, even though it resulted in some minor disadvantages to the public, is justified if it preserves or encourages the greater advantages and benefits to the public of continuing the productions of inventions which have initiated and continued the great era of progress and prosperity to which we have referred. Nor is this great cause to be slowed or stalled because it is helped and advanced by one of whom the petitioners disapprove. Assuming that a practice of pooling patents involves minor evils along with major benefits, such is true of any new law or procedure. It is true of any reform. It is true of any progress. As Sir Francis Bacon said "civil reform seldom is carried on without violence and confusion." Whatever, if any, disturbance may have been caused by the pooling of patents, no violence or confusion has been caused thereby.

Patent pools are by no means new. The first recorded patent pool in this country was formed in the middle 1850's around the Howe sewing machine invention. No one can doubt the lasting benefit conferred upon women in all countries and in all times by the invention of the sewing machine. Yet Howe, the inventor, reaped nothing but disaster until he and his backer pooled his patent with those of others, including the Singer Sewing Machine Company, which was anathema in those days. There is no reason why Mr. Mooers should not have benefited by Howe's experiences and formed this "piston patent pool" without experiencing the hardships of Howe before its formation. Howe's patent pool was formed and conducted to best promote the sale and use of the sewing machine. Every patent pool since that time has been formed and conducted for sim-

ilar purpose. In the instant cause, successful adoption and use of aluminum pistons is bottomed upon careful manufacture and scientific machining of those pistons. Departure from either of these precepts spells disaster not only to the user of a poorly made or machined piston, but calamity to the reputation of the aluminum piston and a cessation of its further use. The public—even the automobile repairing public—is unable to tell the difference between a good aluminum piston and a bad aluminum piston, so much do the alloys, from which, and the designs on which, good and bad aluminum pistons are made resemble each other. It was and is, therefore, not only to the interests of the public who use aluminum pistons, but essential to the success of the aluminum piston, that its manufacture should be confined to those skilled in the making of aluminum piston alloys, the casting of the crude pistons, and the scientific machining of the same to the intended designs with the almost inconceivably small clearance essential to success. To have extended the rights to manufacture aluminum pistons under the patents in suit; indiscriminately, would have resulted in innumerable wrecked automobile engines and in a destruction of the reputation of the aluminum piston and an end to the use of these pistons and the realization of the benefits that accrued to the public from their use. It was for this reason that licenses under the patents were limited to the present licensees, who are enough to furnish adequate competition from a sufficient number of sources of supply.

The situation is not without analogy to practicing medicine and filling druggists' prescriptions. No doubt licenses issued, helter-skelter, to practice medicine and fill prescriptions would cheapen both medical services and medicines, but a lot of people would be poisoned. A poisoned engine is also a disaster. Therefore, aside from any legal rights which respondent may have to control its patent rights as it thinks wisest (see *U. S. v. General Electric*, 272 U. S.

476), public convenience and public policy justified limiting the licenses issued.

Counsel have referred frequently to the Aluminum Company of America as if it were taken for granted that the mere name of that company is justification for striking down the patent rights of the inventors and other patentees whose interests are intrusted to the plaintiff. There is no justification for assuming that patent rights should be destroyed or restricted because the Aluminum Company of America is a licensee under those patents. Nor is it material to any issue in this cause that the Aluminum Company of America failed on a group of patents different from those here involved, in a suit foreign to this suit, brought by the Aluminum Company of America against the manufacturer of the pistons held to infringe in the instant cause.

We have dealt with these matters at this length because we have felt that this underbrush ought not to confuse the real issues presented by the petition, and because so often the broader principles involved are forgotten in a more technical discussion of narrower issues.

Conclusion: The error of petitioners' position is reflected in the last sentence of its section Point IV (see petitioners' brief, p. 52):

"The question was not whether invalidity was shown 'by clear and cogent evidence,' but whether, as a matter of law, a patent is valid which does not disclose, describe or discuss in its specification *an element* found to be essential."

This would be forcible if "*an element*" had been omitted from the original disclosure, but the element, i.e. the web, is not omitted; it was originally included in each the drawing, the specification, and in claims of each of the patents in suit. It is a description of an inherent property of the material of the web, i.e. flexibility, that was omitted.

This statement shows, as we have contended throughout this brief, that petitioners' claim that the disclosure omitted an element—which might be fatal to a patent claim under the law*—is in effect a claim that there is omitted only the mention of a potency inherent in the material of the element and known to be so by everyone in the industry and which the law does not require be included. (Radio vs. Radio, 293 U. S. 1, 14.) Thus does the final sentence of petitioners' brief point the error of petitioners' contention.

Much in generalities ought to be said in conclusion, but we will limit ourselves to the observation that in equity and good conscience the rights of those, whom such master thinkers as Sir Francis Bacon and Abraham Lincoln have proclaimed as the greatest of human benefactors, should not be stricken down on such hair-splitting technicalities as are here urged. No one in his senses doubts for a moment that the patents do, in fact, and have, in fact, furnished more evidence to the builders of pistons than is furnished such builders by the engineer who designed the piston built by those builders. No one in his senses questions the sufficiency of the disclosures to teach those skilled in the art how to build the pistons. The maker of the infringing pistons had no difficulty in duplicating the plaintiff's licensees' pistons after that maker failed to succeed with pistons of its own design. (R. p. 1074.)

Everyone knows that in this imperfect world imperfection of a dialectic nature can be found in every document, legal or otherwise classified, but nobody can cite any instance where any Court of Equity in this or any other land struck down a patent or any other contract because of

* The fatal effect would apply only to the claims which included the omitted element since the disclosure without a recitation of the element would support claims not reciting it (Boyes v. Stewart-Warner, 220 Fed. 118, 123, C. C. A. 2).

a failure to do the impossible, i.e. describe all the known properties inherent in all the elements.

We think the Court of Appeals should be affirmed.

If this Court should, nevertheless, reverse the Court of Appeals, we think the cause should be remanded to the Court of Appeals with directions to that Court to rule upon the claims of the Gulick and Maynard patents * and the other patents in question which are involved in the cause and in the appeal and presented to the Court of Appeals, but which the Court of Appeals did not rule upon because of the presumption by the Court of Appeals that its decision would stand as a final disposition of the cause and would be unchanged, and if it did stand as a final disposition of the cause and was unchanged, there would be no need—or so that Court thought—of ruling upon these other matters and questions. If this Court should reverse the Court of Appeals on the questions that the Court of Appeals did decide, then the decision of the Court of Appeals on the questions not ruled upon by that Court would become important. In other words, the Court considered that full recovery could be had by the plaintiff under the claims of the Gulick and Maynard patents selected by that Court from those relied upon and, without disposing of the other questions, ordered the cause dismissed without prejudice with respect to these other questions. If this Court should reverse the Court of Appeals on the claims of Gulick and Maynard thus selected and ruled upon so that no recovery can be had upon them, it is obvious that these other questions become important and should be considered and disposed of by the Court of Appeals in lieu of those which that Court selected and ruled upon as sufficient in the light of the Court's pre-

* Some of these claims did not recite the webs and, therefore, would not be involved even if petitioners were right on all four of their points.

sumption that its ruling would be final. (*Crown Cork & Seal Co. v. Ferdinand Gutmann*, 82 L. Ed. 835, Advance Opinions; *Cramp v. International*, 228 U. S. 645, 57 L. Ed. 757.)

Respectfully submitted,

ARTHUR C. DENISON,

FRANK O. RICHEY,

WILLIAM C. MCCOY,

Attorneys for Respondents.

